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# Leistungserklärung



Nr.: 4 - 021 - 160089 - 2016/01

1.) Eindeutiger Kenncode des Produkttyps:

**EJOT Chemical Anchor MULTIFIX USF oder MULTIFIX USF winter für Mauerwerk (033)**

2.) Verwendungszweck:

**Injektionssystem zur Verankerung im Mauerwerk**

3.) Hersteller:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System zur Bewertung und Überprüfung der Leistungsbeständigkeit:

**System 1**

5.) Europäisches Bewertungsdokument

**ETAG 029**

Europäisch Technische Bewertung:

**ETA 16/0089**

Technische Bewertungsstelle:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Notifizierte Stelle:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Erklärte Leitung(en):

a) Mechanische Festigkeit und Standsicherheit (BWR 1) und Sicherheit bei der Nutzung (BWR 4)

Wesentliche Merkmale	Leistungswerte
Charakteristische Tragfähigkeit der Stahlelemente	Siehe Anhang C2
Charakteristische Tragfähigkeit der Dübel im Mauerwerk	Siehe Anhänge C3 - C45
Verformungen unter Querlast und Zuglast	Siehe Anhänge C4 - C45
Reduktionsfaktor für Baustellenversuche ( $\beta$ -Faktor)	Siehe Anhang C1
Rand- und Achsabstände	Siehe Anhänge C3 - C45
Gruppenfaktor für Gruppenbefestigungen	Siehe Anhänge C3 - C45

# Leistungserklärung

Nr.: 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Brandschutz (BWR 2)

Wesentliche Merkmale	Leistungswerte
Brandverhalten	Klasse A1
Feuerwiderstand	Keine Leistung bestimmt

## c) Hygiene, Gesundheit und Umweltschutz (BWR 3)

Wesentliche Merkmale	Leistungswerte

## d) Schallschutz (BWR 5)

Wesentliche Merkmale	Leistungswerte

## e) Energieeinsparung und Wärmeschutz (BWR 6)

Wesentliche Merkmale	Leistungswerte

## f) Nachhaltige Nutzung der natürlichen Ressourcen (BWR 7)

Wesentliche Merkmale	Leistungswerte

Die Leistung des vorstehenden Produkts entspricht der erklärten Leistung/den erklärten Leistungen. Für die Erstellung der Leistungserklärung im Einklang mit der Verordnung (EU) Nr. 305/2011 ist allein der oben genannte Hersteller verantwortlich.

Unterzeichnet für den Hersteller und im Namen des Herstellers von:

**Dr. Jens Weber**

(Name)

**Bad Laasphe, 24.11.2016**

(Ort und Datum der Ausstellung)



(Unterschrift)

# Declaration of Performance



No **4 - 021 - 160089 - 2016/01**

1.) Unique identification code of the product-type:  
**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Intended use:  
**Injection system for use in masonry**

3.) Manufacturer:  
**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System of AVCP:  
**System 1**

5.) European Assesment Document: **ETAG 029**  
European Technical Assessment: **ETA 16/0089**  
Technical assessment body: **DIBt - Deutsches Institut für Bautechnik, Berlin**  
Notified body: **2873 - IFSW - Technische Universität Darmstadt**

6.) Declared Performance:

a) Mechanical resistance and stability (BWR 1) and safety and accessibility (BWR 4)

Essential characteristic	Performance
Characteristic resistance for steel elements	See Annex C2
Characteristic resistance for anchors in masonry units	See Annex C3 - C45
Displacements under shear and tension loads	See Annex C4 - C45
Reduction Factor for job sites ( $\beta$ -Factor)	See Annex C1
Edge distances and spacing	See Annex C3 - C45
Group factor for group fastenings	See Annex C3 - C45

# Declaration of Performance

No **4 - 021 - 160089 - 2016/01**



## b) Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	No performance assessed

## c) Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance

## d) Protection against noise (BWR 5)

Essential characteristic	Performance

## e) Energy economy and heat retention (BWR 6)

Essential characteristic	Performance

## f) Sustainable use of natural resources (BWR 7)

Essential characteristic	Performance

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

**Dr. Jens Weber**

(Name)

**Bad Laasphe, 24.11.2016**

(Place and date of issue)



(Signature)

# ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ 4 - 021 - 160089 - 2016/01



1.) Уникален идентификационен код на типа продукт:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Предвидена употреба/употреби:

**Система за впръскване за използване в зидария**

3.) Производител:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Система/системи за оценяване и проверка на постоянството на експлоатационните показатели:

**Система 1**

5.) Европейски документ за оценяване:

**ETAG 029**

Европейска техническа оценка:

**ETA 16/0089**

Орган за техническа оценка:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Нотифициран орган/органи:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Декларирани експлоатационни показатели:

а) Механична устойчивост и стабилност (BWR 1) и безопасност и достъпност (BWR 4)

Основни характеристики	Показатели
Характерна устойчивост за стоманени елементи	Вж. приложение C2
Характерно съпротивление за анкери в зидария	Вж. приложения C3 - C45
Премествания при натоварване на срязване и опън	Вж. приложения C4 - C45
Коефициент на редуция за работни места ( $\beta$ -фактор)	Вж. приложение C1
Разстояния между ръбовете и разстояния между тях	Вж. приложения C3 - C45
Групов коефициент за групови скрепителни елементи	Вж. приложения C3 - C45

# ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ 4 - 021 - 160089 - 2016/01



## b) Безопасност в случай на пожар (BWR 2)

Основни характеристики	Показатели
Реакция при пожар	Клас A1
Устойчивост на огън	Няма оценка на изпълнението
Устойчивост на огън	Няма оценка на изпълнението

## c) Хигиена, здраве и околна среда (BWR 3)

Основни характеристики	Показатели

## d) Защита от шум (BWR 5)

Основни характеристики	Показатели

## e) Икономия на енергия и запазване на топлината (BWR 6)

Основни характеристики	Показатели

## f) Устойчиво използване на природните ресурси (BWR 7)

Основни характеристики	Показатели

Експлоатационните показатели на продукта, посочени по-горе, са в съответствие с декларираните експлоатационни показатели. Настоящата декларация за експлоатационни показатели се издава в съответствие с Регламент (ЕС) № 305/2011, като отговорността за нея се носи изцяло от посочения по-горе производител.

Подписано за и от името на производителя от:

**Dr. Jens Weber**

(Име)

**Bad Laasphe, 24.11.2016**

(Място и Дата)

(Подпис)

# PROHLÁŠENÍ O VLASTNOSTECH



č. **4 - 021 - 160089 - 2016/01**

1.) Jedinečný identifikační kód typu výrobku:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Zamýšlené/zamýšlená použití:

**Injekční systém pro použití ve zdivu**

3.) Výrobce:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Systém/systémy POSV:

**Systém 1**

5.) Evropský dokument pro posuzování:

**ETAG 029**

Evropské technické posouzení:

**ETA 16/0089**

Subjekt pro technické posuzování:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Oznámený subjekt/oznámené subjekty:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarovaná vlastnost/Deklarované vlastnosti:

a) Mechanická odolnost a stabilita (BWR 1) a bezpečnost a dostupnost (BWR 4)

základní charakteristiky	vlastnosti výrobku
Charakteristická odolnost pro ocelové prvky	Viz příloha C2
Charakteristická odolnost pro kotvy ve zdivu	Viz přílohy C3 - C45
Posuny při smykovém a tahovém zatížení	Viz přílohy C4 - C45
Redukční faktor pro pracoviště ( $\beta$ -faktor)	Viz příloha C1
Vzdálenosti a rozestupy okrajů	Viz přílohy C3 - C45
Skupinový faktor pro skupinové upevnění	Viz přílohy C3 - C45



# PROHLÁŠENÍ O VLASTNOSTECH

č. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Bezpečnost při požáru (BWR 2)

základní charakteristiky	vlastnosti výrobku
Reakce na oheň	Třída A1
Odolnost proti ohni	Žádný hodnocený výkon

## c) Hygiena, zdraví a životní prostředí (BWR 3)

základní charakteristiky	vlastnosti výrobku

## d) Ochrana proti hluku (BWR 5)

základní charakteristiky	vlastnosti výrobku

## e) Úspora energie a zadržování tepla (BWR 6)

základní charakteristiky	vlastnosti výrobku

## f) Udržitelné využívání přírodních zdrojů (BWR 7)

základní charakteristiky	vlastnosti výrobku

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Toto prohlášení o vlastnostech se v souladu s nařízením (EU) č. 305/2011 vydává na výhradní odpovědnost výrobce uvedeného výše.

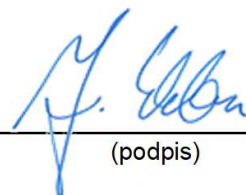
Podepsáno za výrobce a jeho jménem:

**Dr. Jens Weber**

(jméno)

**Bad Laasphe, 24.11.2016**

(místo a datum vydání)



(podpis)

# YDEEVNEDEKLARATION



Nr.: **4 - 021 - 160089 - 2016/01**

1.) Varetypens unikke identifikationskode:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Tilsigtet anvendelse:

**Injektionssystem til brug i murværk**

3.) Fabrikant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System eller systemer til vurdering og kontrol af konstansen af ydeevnen:

**System 1**

5.) Europæisk vurderingsdokument:

**ETAG 029**

Europæisk teknisk vurdering:

**ETA 16/0089**

Teknisk vurderingsorgan:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Notificeret organ/notificerede organer:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklareret ydeevne/deklarerede ydeevner:

a) Mekanisk modstand og stabilitet (BWR 1) og sikkerhed og tilgængelighed (BWR 4)

Væsentlige egenskaber	Ydelse
Karakteristisk modstandsdygtighed for stålelementer	Se bilag C2
Karakteristisk modstand for forankringer i murværk	Se bilag C3 - C45
forskydninger under forskydnings- og trækbelastning	Se bilag C4 - C45
Factor de reducción de las obras (Factor $\beta$ )	Se bilag C1
Kantafstande og -afstande	Se bilag C3 - C45
Gruppenfaktor for gruppebefæstigelse	Se bilag C3 - C45

# YDEEVNEDEKLARATION

Nr.: 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Sikkerhed ved brand (BWR 2)

Væsentlige egenskaber	Ydelse
Reaktioner på brand	Klasse A1
Modstandsdygtighed over for brand	Ingen ydeevne vurderet

## c) Hygiejne, sundhed og miljø (BWR 3)

Væsentlige egenskaber	Ydelse

## d) Beskyttelse mod støj (BWR 5)

Væsentlige egenskaber	Ydelse

## e) Energibesparelser og varmebinding (BWR 6)

Væsentlige egenskaber	Ydelse

## f) Bæredygtig udnyttelse af naturressourcer (BWR 7)

Væsentlige egenskaber	Ydelse

Ydeevnen for den vare, der er anført ovenfor, er i overensstemmelse med den deklarerede ydeevne. Denne ydeevnedeklaration er udarbejdet i overensstemmelse med forordning (EU) nr. 305/2011 på eneansvar af den fabrikant, der er anført ovenfor.

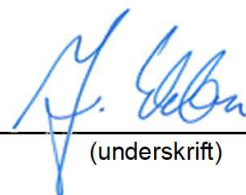
Underskrevet for fabrikanten og på dennes vegne af:

**Dr. Jens Weber**

(navn)

**Bad Laasphe, 24.11.2016**

(sted og dato for udstedelse)



(underskrift)

# TOIMIVUSDEKLARATSIOON

nr **4 - 021 - 160089 - 2016/01**



1.) Tootetüübi kordumatu identifitseerimiskood:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Kavandatud kasutusala(d):

**Müürisüsteemi kasutamine müüritise puhul**

3.) Tootja:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Toimivuse püsivuse hindamise ja kontrolli süsteem:

**Süsteem 1**

5.) Euroopa hindamisdokument:

**ETAG 029**

Euroopa tehniline hinnang:

**ETA 16/0089**

Tehnilise hindamise asutus:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Teavitatud asutus(ed):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklareeritud toimivus:

a) Mehaaniline vastupidavus ja stabiilsus (BWR 1) ning ohutus ja juurdepääsetavus (BWR 4)

Põhiomadused	Toimivus
Teraseelementide iseloomulik vastupidavus	Vt lisa C2
Müüritise ankrute iseloomulik vastupidavus	Vt lisad C3 - C45
Nihked nihke- ja tõmbekoormuse korral	Vt lisad C4 - C45
Töökohtade vähendusfaktor ( $\beta$ -faktor)	Vt lisa C1
Serva kaugused ja vahekaugused	Vt lisad C3 - C45
Grupitegur grupi kinnituste jaoks	Vt lisad C3 - C45

# TOIMIVUSDEKLARATSIOON

nr 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Ohutus tulekahju korral (BWR 2)

Põhiomadused	Toimivus
Reaktsioon tulekahjule	Klass A1
Vastupidavus tulekahju suhtes	Tulemuslikkust ei ole hinnatud

## c) Hügieen, tervis ja keskkond (BWR 3)

Põhiomadused	Toimivus

## d) Kaitse müra eest (BWR 5)

Põhiomadused	Toimivus

## e) Energiasääst ja soojapidavus (BWR 6)

Põhiomadused	Toimivus

## f) Loodusvarade säästev kasutamine (BWR 7)

Põhiomadused	Toimivus

Eespool kirjeldatud toote toimivus vastab deklareeritud toimivusele. Käesolev toimivusdeklaratsioon on välja antud kooskõlas määrusega (EL) nr 305/2011 eespool nimetatud tootja ainuvastutusel.

Tootja poolt ja nimel allkirjastanud:

**Dr. Jens Weber**

(Nimi)

**Bad Laasphe, 24.11.2016**

(Koht ja kuupäev)



(Allkiri)

# DECLARACIÓN DE PRESTACIONES



no **4 - 021 - 160089 - 2016/01**

1.) Código de identificación única del producto tipo:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Usos previstos:

**Sistema de inyección para uso en mampostería**

3.) Fabricante:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemas de evaluación y verificación de la constancia de las prestaciones (EVCP):

**Sistema 1**

5.) Documento de evaluación europeo:

**ETAG 029**

Evaluación técnica europea:

**ETA 16/0089**

Organismo de evaluación técnica:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Organismos notificados:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Prestaciones declaradas:

a) Resistencia mecánica y estabilidad (BWR 1) y seguridad y accesibilidad (BWR 4)

Características esenciales	Prestaciones
Resistencia característica de los elementos de acero	Véase el anexo C2
Resistencia característica para anclajes en unidades de mampostería	Véanse los anexos C3 - C45
Desplazamientos bajo cargas de cizallamiento y tensión	Véanse los anexos C4 - C45
Factor de reducción de las obras (Factor $\beta$ )	Véase el anexo C1
Distancias y espaciamiento de los bordes	Véanse los anexos C3 - C45
Factor de grupo para las fijaciones de grupo	Véanse los anexos C3 - C45

# DECLARACIÓN DE PRESTACIONES

no **4 - 021 - 160089 - 2016/01**

# EJOT®

## b) Seguridad en caso de incendio (BWR 2)

Características esenciales	Prestaciones
Reacción al fuego	Clase A1
Resistencia al fuego	No se ha evaluado el rendimiento

## c) Higiene, salud y medio ambiente (BWR 3)

Características esenciales	Prestaciones

## d) Protección contra el ruido (BWR 5)

Características esenciales	Prestaciones

## e) Ahorro de energía y retención del calor (BWR 6)

Características esenciales	Prestaciones

## f) Uso sostenible de los recursos naturales (BWR 7)

Características esenciales	Prestaciones

Las prestaciones del producto identificado anteriormente son conformes con el conjunto de prestaciones declaradas. La presente declaración de prestaciones se emite, de conformidad con el Reglamento (UE) no 305/2011, bajo la sola responsabilidad del fabricante arriba identificado.

Firmado por y en nombre del fabricante por:

**Dr. Jens Weber**

(nombre)

**Bad Laasphe, 24.11.2016**

(lugar y fecha de emisión)



(firma)

# SUORITUSTASOILMOITUS

Nro 4 - 021 - 160089 - 2016/01



1.) Tuotetyypin yksilöllinen tunnistus:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Aiottu käyttötarkoitus (aiotut käyttötarkoitukset):

**Muurauksessa käytettävä ruiskutusjärjestelmä**

3.) Valmistaja:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Suoritustason pysyvyyden arvioinnissa ja varmentamisessa käytetty järjestelmä/käytetyt järjestelmät:

**Järjestelmä 1**

5.) Eurooppalainen arviointiasiakirja:

**ETAG 029**

Eurooppalainen tekninen arviointi:

**ETA 16/0089**

Teknisestä arvioinnista vastaava laitos:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Ilmoitettu laitos/ilmoitetut laitokset:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Ilmoitettu suoritustaso/ilmoitetut suoritustasot:

a) Mekaaninen kestävyys ja vakavuus (BWR 1) sekä turvallisuus ja saavutettavuus (BWR 4)

Perusominaisuudet	Tuotteen suoritustaso
Teräselementtien ominaiskestävyys	Katso liite C2
Muuratuissa yksiköissä olevien ankkureiden ominaiskestävyys	Katso liitteet C3-C45
Siirtymät leikkaus- ja vetokuormituksessa	Katso liitteet C4-C45
Työmaiden vähennyskerroin ( $\beta$ -kerroin)	Katso liite C1
Reunaetäisyydet ja -välit	Katso liitteet C3-C45
Ryhmäkerroin ryhmäkiinnikkeille	Katso liitteet C3-C45



# SUORITUSTASOILMOITUS

Nro 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Turvallisuus tulipalon sattuessa (BWR 2)

Perusominaisuudet	Tuotteen suoritustaso
Reagointi tulipaloon	Luokka A1
Tulenkestävyys	Suorituskykyä ei ole arvioitu

## c) Hygienia, terveys ja ympäristö (BWR 3)

Perusominaisuudet	Tuotteen suoritustaso

## d) Suojaus melua vastaan (BWR 5)

Perusominaisuudet	Tuotteen suoritustaso

## e) Energiansäästö ja lämmöntalteenotto (BWR 6)

Perusominaisuudet	Tuotteen suoritustaso

## f) Luonnonvarojen kestävä käyttö (BWR 7)

Perusominaisuudet	Tuotteen suoritustaso

Edellä yksilöidyn tuotteen suoritustaso on ilmoitettujen suoritustasojen joukon mukainen. Tämä suoritustasoilmoitus on asetuksen (EU) N:o 305/2011 mukaisesti annettu edellä ilmoitetun valmistajan yksinomaisella vastuulla.

Valmistajan puolesta allekirjoittanut:

**Dr. Jens Weber**

(nimi)

**Bad Laasphe, 24.11.2016**

(paikka ja päivämäärä)



(allekirjoitus)

# DÉCLARATION DES PERFORMANCES



No **4 - 021 - 160089 - 2016/01**

1.) Code d'identification unique du produit type:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Usage(s) prévu(s):

**Système d'injection pour utilisation dans la maçonnerie**

3.) Fabricant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Système(s) d'évaluation et de vérification de la constance des performances:

**Système 1**

5.) Document d'évaluation européen:

**ETAG 029**

Évaluation technique européenne:

**ETA 16/0089**

Organisme d'évaluation technique:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Organisme(s) notifié(s):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Performance(s) déclarée(s):

a) Résistance mécanique et stabilité (BWR 1) et sécurité et accessibilité (BWR 4)

Caractéristiques essentielles	Performances du produit
Résistance caractéristique des éléments en acier	Voir l'annexe C2
Résistance caractéristique des ancrages dans les éléments de maçonnerie	Voir annexes C3 - C45
Déplacements sous charges de cisaillement et de traction	Voir annexes C4 - C45
Facteur de réduction pour les chantiers (Facteur $\beta$ )	Voir l'annexe C1
Distances et espacement des bords	Voir annexes C3 - C45
Facteur de groupe pour les fixations de groupe	Voir annexes C3 - C45

# DÉCLARATION DES PERFORMANCES

No 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Sécurité en cas d'incendie (REB 2)

Caractéristiques essentielles	Performances du produit
Réaction au feu	Classe A1
Résistance au feu	Aucune performance évaluée

## c) Hygiène, santé et environnement (REB 3)

Caractéristiques essentielles	Performances du produit

## d) Protection contre le bruit (REB 5)

Caractéristiques essentielles	Performances du produit

## e) Économie d'énergie et rétention de la chaleur (REB 6)

Caractéristiques essentielles	Performances du produit

## f) Utilisation durable des ressources naturelles (REB 7)

Caractéristiques essentielles	Performances du produit

Les performances du produit identifié ci-dessus sont conformes aux performances déclarées. Conformément au règlement (UE) no 305/2011, la présente déclaration des performances est établie sous la seule responsabilité du fabricant mentionné ci-dessus.

Signé pour le fabricant et en son nom par:

**Dr. Jens Weber**

(Nom)

**Bad Laasphe, 24.11.2016**

(Lieu et date)



(Signature)

## ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αριθ. **4 - 021 - 160089 - 2016/01**



1.) Μοναδικός κωδικός ταυτοποίησης του τύπου του προϊόντος:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Προβλεπόμενη(-ες) χρήση(-εις):

**Σύστημα έγχυσης για χρήση σε τοιχοποιία**

3.) Κατασκευαστής:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Σύστημα/συστήματα AVCP (αξιολόγηση και επαλήθευση της σταθερότητας της επίδοσης):

**σύστημα 1**

5.) Ευρωπαϊκό έγγραφο αξιολόγησης:

**ETAG 029**

Ευρωπαϊκή τεχνική αξιολόγηση:

**ETA 16/0089**

Οργανισμός τεχνικής αξιολόγησης:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Κοινοποιημένος(-οι) οργανισμός(-οι):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Δηλωθείσα(-ες) επίδοση(-εις):

a) Μηχανική αντίσταση και σταθερότητα (BWR 1) και ασφάλεια και προσβασιμότητα (BWR 4)

Ουσιώδη χαρακτηριστικά	Απόδοση
Χαρακτηριστική αντοχή για χαλύβδινα στοιχεία	Βλέπε παράρτημα Γ2
Χαρακτηριστική αντίσταση για αγκύρια σε μονάδες τοιχοποιίας	Βλέπε παραρτήματα C3 - C45
Μετατοπίσεις υπό διατμητικά και εφελκυστικά φορτία	Βλέπε παραρτήματα C4 - C45
Συντελεστής μείωσης για εργοτάξια (συντελεστής β)	Βλέπε παράρτημα Γ1
Αποστάσεις και αποστάσεις άκρων	Βλέπε παραρτήματα C3 - C45
Συντελεστής ομάδας για ομαδικές συνδέσεις	Βλέπε παραρτήματα C3 - C45

**ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ**Αριθ. **4 - 021 - 160089 - 2016/01****EJOT®****b) Ασφάλεια σε περίπτωση πυρκαγιάς (BWR 2)**

Ουσιώδη χαρακτηριστικά	Απόδοση
Αντίδραση στη φωτιά	Κατηγορία A1
Αντοχή στη φωτιά	Δεν αξιολογούνται οι επιδόσεις

**c) Υγιεινή, υγεία και περιβάλλον (BWR 3)**

Ουσιώδη χαρακτηριστικά	Απόδοση

**d) Προστασία από θόρυβο (BWR 5)**

Ουσιώδη χαρακτηριστικά	Απόδοση

**e) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 6)**

Ουσιώδη χαρακτηριστικά	Απόδοση

**f) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 7)**

Ουσιώδη χαρακτηριστικά	Απόδοση

Η επίδοση του προϊόντος που ταυτοποιείται ανωτέρω είναι σύμφωνη με τη (τις) δηλωθείσα(-ες) επίδοση(-εις). Η δήλωση αυτή των επιδόσεων συντάσσεται, σύμφωνα με τον κανονισμό (ΕΕ) αριθ. 305/2011, με αποκλειστική ευθύνη του κατασκευαστή που ταυτοποιείται ανωτέρω.

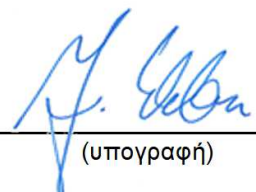
Υπογραφή για λογαριασμό και εξ ονόματος του κατασκευαστή από:

**Dr. Jens Weber**

(όνομα)

**Bad Laasphe, 24.11.2016**

(τόπος και ημερομηνία έκδοσης)

  
(υπογραφή)

# IZJAVA O SVOJSTVIMA

Br. **4 - 021 - 160089 - 2016/01**



1.) Jedinstvena identifikacijska oznaka vrste proizvoda:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Namjena/namjene:

**Sustav za injektiranje za korištenje u zidanju**

3.) Proizvođač:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sustav/sustavi za ocjenu i provjeru stalnosti svojstava (AVCP):

**Sustav 1**

5.) Europski dokument za ocjenjivanje:

**ETAG 029**

Europska tehnička ocjena:

**ETA 16/0089**

Tijelo za tehničko ocjenjivanje:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Prijavljeno tijelo/prijavljena tijela:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Objavljena svojstva:

a) Mehanička otpornost i stabilnost (BWR 1) i sigurnost i pristupačnost (BWR 4)

Bitne karakteristike	Svojstva
Karakteristična otpornost čeličnih elemenata	Vidi Dodatak C2
Karakteristična otpornost za sidra u zidanim jedinicama	Vidi dodatke C3 - C45
Pomaci pod posmičnim i vlačnim opterećenjima	Vidi dodatke C4 - C45
Faktor redukcije za radna mjesta ( $\beta$ -faktor)	Vidi Dodatak C1
Rubne udaljenosti i razmaci	Vidi dodatke C3 - C45
Grupni faktor za grupna pričvršćivanja	Vidi dodatke C3 - C45

# IZJAVA O SVOJSTVIMA

Br. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Sigurnost u slučaju požara (BWR 2)

Bitne karakteristike	Svojstva
Reakcija na vatru	Klasa A1
Otpornost na vatru	Izvedba nije procijenjena

## c) Higijena, zdravlje i okoliš (BWR 3)

Bitne karakteristike	Svojstva

## d) Zaštita od buke (BWR 5)

Bitne karakteristike	Svojstva

## e) Ušteda energije i zadržavanje topline (BWR 6)

Bitne karakteristike	Svojstva

## f) Održivo korištenje prirodnih resursa (BWR 7)

Bitne karakteristike	Svojstva

Prije utvrđeno svojstvo proizvoda u skladu je s objavljenim svojstvima. Ova izjava o svojstvima izdaje se, u skladu s Uredbom (EU) br. 305/2011, pod isključivom odgovornošću prethodno utvrđenog proizvođača.

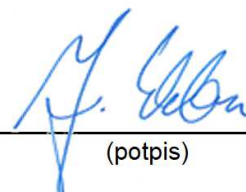
Za proizvođača i u njegovo ime potpisao:

**Dr. Jens Weber**

(ime)

**Bad Laasphe, 24.11.2016**

(Mjesto i datum izdavanja)



(potpis)

# TELJESÍTMÉNYNYILATKOZAT

Száma: 4 - 021 - 160089 - 2016/01



1.) A terméktípus egyedi azonosító kódja:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Felhasználás célja(i):

**Injektáló rendszer falazatba történő befecskendezéshez**

3.) Gyártó:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Az AVCP-rendszer(ek):

**rendszer 1**

5.) Az európai értékelési dokumentum:

**ETAG 029**

Európai műszaki értékelés:

**ETA 16/0089**

A műszaki értékelést végző szerv:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Bejelentett szerv(ek):

**2873 - IFSW - Technische Universität Darmstadt**

6.) A nyilatkozatban szereplő teljesítmény(ek):

a) Mechanikai ellenállás és stabilitás (BWR 1), biztonság és elérhetőség (BWR 4)

Lényeges termékjellemzők	Termék teljesítménye
Acélelemek jellemző ellenállása	Lásd a C2. mellékletet
A falazóelemek horgonyainak jellemző ellenállása	Lásd a C3-C45. mellékleteket
Nyíró- és húzóterhelés alatti elmozdulások	Lásd a C4-C45. mellékleteket
Csökkentési tényező a munkaterületeken ( $\beta$ -tényező)	Lásd a C1. mellékletet
Élek távolsága és távolsága	Lásd a C3-C45. mellékleteket
Csoportos tényező a csoportos rögzítésekhez	Lásd a C3-C45. mellékleteket



# TELJESÍTMÉNYNYILATKOZAT

Száma: 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Biztonság tűz esetén (BWR 2)

Lényeges termékjellemzők	Termék teljesítménye
Tűzre adott reakció	A1 osztály
Tűzállóság	Nincs értékelt teljesítmény

## c) Higiénia, egészség és környezet (BWR 3)

Lényeges termékjellemzők	Termék teljesítménye

## d) Zaj elleni védelem (BWR 5)

Lényeges termékjellemzők	Termék teljesítménye

## e) Energiatakarékosság és hővisszatartás (BWR 6)

Lényeges termékjellemzők	Termék teljesítménye

## f) A természeti erőforrások fenntartható használata (BWR 7)

Lényeges termékjellemzők	Termék teljesítménye

A fent azonosított termék teljesítménye megfelel a bejelentett teljesítmény(ek)nek. A 305/2011/EU rendeletnek megfelelően e teljesítménynyilatkozat kiadásáért kizárólag a fent meghatározott gyártó a felelős.

A gyártó nevében és részéről aláíró személy:

**Dr. Jens Weber**

(név)

**Bad Laasphe, 24.11.2016**

(hely és kiállítás dátuma)



(aláírás)

# DICHIARAZIONE DI PRESTAZIONE



N. **4 - 021 - 160089 - 2016/01**

1.) Codice di identificazione unico del prodotto-tipo:  
**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Usi previsti:  
**Sistema di iniezione per l'uso in muratura**

3.) Fabbricante:  
**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemi di VVCP:  
**Sistema 1**

5.) Documento per la valutazione europea: **ETAG 029**  
Valutazione tecnica europea: **ETA 16/0089**  
Organismo di valutazione tecnica: **DIBt - Deutsches Institut für Bautechnik, Berlin**  
Organismi notificati: **2873 - IFSW - Technische Universität Darmstadt**

6.) Prestazioni dichiarate:

a) Resistenza meccanica e stabilità (BWR 1) e sicurezza e accessibilità (BWR 4)

Caratteristiche essenziali	Prestazione
Resistenza caratteristica per elementi in acciaio	Vedi allegato C2
Resistenza caratteristica per ancoraggi in unità di muratura	Vedi allegati C3 - C45
Spostamenti sotto carichi di taglio e trazione	Vedi allegati C4 - C45
Fattore di riduzione per i cantieri (fattore $\beta$ )	Vedi allegato C1
Distanze e spaziature dei bordi	Vedi allegati C3 - C45
Fattore di gruppo per fissaggi di gruppo	Vedi allegati C3 - C45

# DICHIARAZIONE DI PRESTAZIONE

N. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Sicurezza in caso di incendio (BWR 2)

Caratteristiche essenziali	Prestazione
Reazione al fuoco	Classe A1
Resistenza al fuoco	Nessuna prestazione valutata

## c) Igiene, salute e ambiente (BWR 3)

Caratteristiche essenziali	Prestazione

## d) Protezione contro il rumore (BWR 5)

Caratteristiche essenziali	Prestazione

## e) Economia energetica e ritenzione di calore (BWR 6)

Caratteristiche essenziali	Prestazione

## f) Uso sostenibile delle risorse naturali (BWR 7)

Caratteristiche essenziali	Prestazione

La prestazione del prodotto sopra identificato è conforme all'insieme delle prestazioni dichiarate. La presente dichiarazione di responsabilità viene emessa, in conformità al regolamento (UE) n. 305/2011, sotto la sola responsabilità del fabbricante sopra identificato.

Firmato a nome e per conto del fabbricante da:

**Dr. Jens Weber**

(nome)

**Bad Laasphe, 24.11.2016**

(luogo e data del rilascio)



(firma)

# EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA



Nr. **4 - 021 - 160089 - 2016/01**

1.) Produkto tipo unikalus identifikavimo kodas:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Naudojimo paskirtis (-ys):

**Injekcijos sistema, skirta naudoti mūre**

3.) Gamintojas:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Eksploatacinių savybių pastovumo vertinimo ir tikrinimo sistema (-os):

**Sistema 1**

5.) Europos vertinimo dokumentas:

**ETAG 029**

Europos techninis įvertinimas:

**ETA 16/0089**

Techninio vertinimo įstaiga:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Notifikuotoji (-osios) įstaiga (-os):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklaruojama (-os) eksploatacinė (-ės) savybė (-ės):

a) Mechaninis atsparumas ir stabilumas (BWR 1) ir saugumas bei prieinamumas (BWR 4)

Esminės charakteristikos	Eksploatacinės savybės
Charakteristinis plieninių elementų atsparumas	Žr. C2 priedą
Mūro blokų inkarų charakteristinis atsparumas	Žr. C3-C45 priedus.
Poslinkiai, veikiami šlyties ir tempimo apkrovų	Žr. C4-C45 priedus.
Darbo vietų mažinimo koeficientas ( $\beta$ -faktorius)	Žr. C1 priedą
Atstumai tarp kraštų ir atstumai tarp jų	Žr. C3-C45 priedus.
Grupinių tvirtinimo detalių grupės koeficientas	Žr. C3-C45 priedus.

# EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Sauga gaisro atveju (BWR 2)

Esminės charakteristikos	Eksploatacinės savybės
Reakcija į ugnį	A1 klasė
Atsparumas ugniai	Veiklos rezultatai neįvertinti

## c) Higiena, sveikata ir aplinka (BWR 3)

Esminės charakteristikos	Eksploatacinės savybės

## d) Apsauga nuo triukšmo (BWR 5)

Esminės charakteristikos	Eksploatacinės savybės

## e) Energijos taupymas ir šilumos išsaugojimas (BWR 6)

Esminės charakteristikos	Eksploatacinės savybės

## f) Tvarus gamtos išteklių naudojimas (BWR 7)

Esminės charakteristikos	Eksploatacinės savybės

Nurodyto produkto eksploatacinės savybės atitinka visas deklaruotas eksploatacines savybes. Ši eksploatacinių savybių deklaracija pateikiama vadovaujantis Reglamentu (ES) Nr. 305/2011, atsakomybė už jos turinį tenka tik joje nurodytam gamintojui.

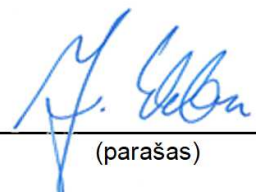
Pasirašyta (gamintojo ir jo vardu):

**Dr. Jens Weber**

(vardas)

**Bad Laasphe, 24.11.2016**

(išdavimo vieta ir data)



(parašas)

# EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA



Nr. **4 - 021 - 160089 - 2016/01**

1.) Unikālais izstrādājuma tipa identifikācijas numurs:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Paredzētais izmantojums:

**Injekcijas sistēma izmantošanai mūrī**

3.) Ražotājs:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Eksploatācijas īpašību noturības novērtējuma un pārbaudes (AVCP) sistēma(-as):

**Sistēma 1**

5.) Eiropas novērtējuma dokuments:

**ETAG 029**

Eiropas tehniskais novērtējums:

**ETA 16/0089**

Tehniskā novērtējuma iestāde:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Paziņotā(-ās) iestāde(-es):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarētā(-ās) eksploatācijas īpašība(-as):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

Būtiskie raksturlielumi	Eksploatācijas īpašības
Tērauda elementu raksturīgā izturība	Skatīt C2 pielikumu.
Raksturīgā pretestība enkuriem mūra blokos	Skatīt C3 - C45 pielikumus.
Pārvietojumi pie bīdes un stiepes slodzēm	Skatīt C4 - C45 pielikumus.
Samazinājuma koeficients darba vietām ( $\beta$ -faktors)	Skatīt C1 pielikumu.
Attālumi starp malām un attālumi	Skatīt C3 - C45 pielikumus.
Grupās faktors grupas stiprinājumiem	Skatīt C3 - C45 pielikumus.

# EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Drošība ugunsgrēka gadījumā (BWR 2)

Būtiskie raksturlielumi	Ekspluatācijas īpašības
Reakcija uz ugunsgrēku	A1 klase
Ugunsizturība	Veiktspēja nav novērtēta

## c) Higiēna, veselība un vide (BWR 3)

Būtiskie raksturlielumi	Ekspluatācijas īpašības

## d) Aizsardzība pret troksni (BWR 5)

Būtiskie raksturlielumi	Ekspluatācijas īpašības

## e) Enerģijas ekonomija un siltuma saglabāšana (BWR 6)

Būtiskie raksturlielumi	Ekspluatācijas īpašības

## f) Dabas resursu ilgtspējīga izmantošana (BWR 7)

Būtiskie raksturlielumi	Ekspluatācijas īpašības

Iepriekš norādītā izstrādājuma ekspluatācijas īpašības atbilst deklarēto ekspluatācijas īpašību kopumam. Šī ekspluatācijas īpašību deklarācija izdota saskaņā ar Regulu (ES) Nr. 305/2011, un par to ir atbildīgs vienīgi iepriekš norādītais ražotājs.

Parakstīts ražotāja vārdā:

**Dr. Jens Weber**

(Vārds)

**Bad Laasphe, 24.11.2016**

(Izsniegšanas vieta un datums)



(Paraksts)

# DIKJARAZZJONI TA' PRESTAZZJONI

Nru. **4 - 021 - 160089 - 2016/01**



1.) Kodiċi uniku ta' identifikazzjoni tat-tip tal-prodott:  
**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Użu/i intenzjonat/i:  
**Sistema ta 'injezzjoni għall-użu fil-ġebel**

3.) Manifattur:  
**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistema/i ta' AVCP:  
**Sistema 1**

5.) Dokument Ewropew ta' Valutazzjoni: **ETAG 029**  
Valutazzjoni Teknika Ewropea: **ETA 16/0089**  
Korp tal-Valutazzjoni Teknika: **DIBt - Deutsches Institut für Bautechnik, Berlin**  
Korp/i nnotifikat/i: **2873 - IFSW - Technische Universität Darmstadt**

6.) Prestazzjoni/jiet ddikjarata/i:  
a) Mehāniskā pretestiġba un stabilitāte (BPP 1) un drošġba un pieejamġba (BPP 4)

Karatteristiċi essenzjali	Prestazzjoni
Reżistenza karatteristika għall-elementi tal-azzar	Ara I-Anness C2
Raksturġgā pretestiġba enkuriem mūra blokos	Ara I-Appendiċi C3 - C45
Spostamenti taħt tagħbijiet ta' shear u tensjoni	Ara I-Appendiċi C4 - C45
Fattur ta' Tnaqqis għal siti tax-xogħol (Fattur $\beta$ )	Ara I-Anness C1
Distanzi tat-tarf u spazjar	Ara I-Appendiċi C3 - C45
Fattur tal-grupp għall-irbit tal-grupp	Ara I-Appendiċi C3 - C45



# DIKJARAZZJONI TA' PRESTAZZJONI

Nru. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Sigurtà fil-każ ta 'nar (BWR 2)

Karatteristiċi essenzjali	Prestazzjoni
Reazzjoni għan-nar	Klassi A1
Reżistenza għan-nar	Ebda prestazzjoni evalwata

## c) Iġjene, saħħa u ambjent (BWR 3)

Karatteristiċi essenzjali	Prestazzjoni

## d) Protezzjoni kontra l-istorbju (BWR 5)

Karatteristiċi essenzjali	Prestazzjoni

## e) Ekonomija tal-enerġija u żamma tas-sħana (BWR 6)

Karatteristiċi essenzjali	Prestazzjoni

## f) Użu sostenibbli tar-riżorsi naturali (BWR 7)

Karatteristiċi essenzjali	Prestazzjoni

Il-prestazzjoni tal-prodott identifikat hawn fuq hija konformi mal-prestazzjonijiet iddikjarati. Din id-dikjarazzjoni ta' prestazzjoni hija maħruġa, skont ir-Regolament (UE) Nru 305/2011, taħt ir-responsabbiltà unika tal-manifattur identifikat hawn fuq.

Iffirmat għal u f'isem il-manifattur minn:

**Dr. Jens Weber**

(isem)

**Bad Laasphe, 24.11.2016**

(post u data tal-ħruġ)



(firma)

# PRESTATIEVERKLARING



Nr. **4 - 021 - 160089 - 2016/01**

1.) Unieke identificatiecode van het producttype:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Beoogd(e) gebruik(en):

**Injectiesysteem voor gebruik in metselwerk**

3.) Fabrikant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Het systeem of de systemen voor de beoordeling en verificatie van de prestatiebestendigheid:

**Systeem 1**

5.) Europees beoordelingsdocument:

**ETAG 029**

Europese technische beoordeling:

**ETA 16/0089**

Technische beoordelingsinstantie:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Aangemelde instantie(s):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Aangegeven prestatie(s):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

Essentiële kenmerken	Prestaties
Karakteristieke weerstand voor stalen elementen	Patrz załącznik C2
Karakteristieke weerstand voor ankers in metselwerkelementen	Zie bijlagen C3 - C45
Verplaatsingen onder afschuif- en trekbelasting	Zie bijlagen C4 - C45
Verminderingsfactor voor werkterreinen ( $\beta$ -factor)	Patrz załącznik C1
Randafstanden en -afstanden	Zie bijlagen C3 - C45
Groepsfactor voor groepssluitingen	Zie bijlagen C3 - C45

# PRESTATIEVERKLARING

Nr. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Veiligheid in geval van brand (BWR 2)

Essentiële kenmerken	Prestaties
Reactie op vuur	Klasse A1
Weerstand tegen vuur	Geen prestatiebeoordeling

## c) Hygiëne, gezondheid en het milieu (BWR 3)

Essentiële kenmerken	Prestaties

## d) Bescherming tegen lawaai (BWR 5)

Essentiële kenmerken	Prestaties

## e) Energiebesparing en warmtebehoud (BWR 6)

Essentiële kenmerken	Prestaties

## f) Duurzaam gebruik van natuurlijke hulpbronnen (BWR 7)

Essentiële kenmerken	Prestaties

De prestaties van het hierboven omschreven product zijn conform de aangegeven prestaties. Deze prestatieverklaring wordt in overeenstemming met Verordening (EU) nr. 305/2011 onder de exclusieve verantwoordelijkheid van de hierboven vermelde fabrikant verstrekt.

Ondertekend voor en namens de fabrikant door:

**Dr. Jens Weber**

(naam)

**Bad Laasphe, 24.11.2016**

(plaats en datum van afgifte)



(handtekening)

# DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr **4 - 021 - 160089 - 2016/01**



1.) Niepowtarzalny kod identyfikacyjny typu wyrobu:  
**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Zamierzone zastosowanie lub zastosowania:  
**System iniekcyjny do stosowania w murze**

3.) Producent:  
**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System(-y) oceny i weryfikacji stałości właściwości użytkowych:  
**system 1**

5.) Europejski Dokument Oceny: **ETAG 029**  
Europejska Ocena Techniczna: **ETA 16/0089**  
Jednostka ds. Oceny Technicznej: **DIBt - Deutsches Institut für Bautechnik, Berlin**  
Jednostka lub Jednostki Notyfikowane: **2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarowane właściwości użytkowe:

a) Nośność i stateczność (BWR 1) oraz bezpieczeństwo użytkowania (BWR 4)

Zasadnicze charakterystyki	Właściwości użytkowe
Nośność charakterystyczna dla elementów stalowych	Patrz załącznik C2
Nośność charakterystyczna dla kotew w elementach murowych	Ver Anexos C3 - C45
Przemieszczenia pod wpływem obciążeń ścinających i rozciągających	Ver Anexos C4 - C45
Współczynnik redukcji dla miejsc pracy ( $\beta$ -Factor)	Patrz załącznik C1
Odległości i odstępy między krawędziami	Ver Anexos C3 - C45
Współczynnik grupowy dla mocowań grupowych	Ver Anexos C3 - C45

# DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Bezpieczeństwo pożarowe (BWR 2)

Zasadnicze charakterystyki	Właściwości użytkowe
Reakcja na ogień	Klasa A1
Odporność na ogień	Brak oceny wyników

## c) Higiena, zdrowie i środowisko (BWR 3)

Zasadnicze charakterystyki	Właściwości użytkowe

## d) Ochrona przed hałasem (BWR 5)

Zasadnicze charakterystyki	Właściwości użytkowe

## e) Oszczędność energii i zatrzymywanie ciepła (BWR 6)

Zasadnicze charakterystyki	Właściwości użytkowe

## f) Zrównoważone wykorzystanie zasobów naturalnych (BWR 7)

Zasadnicze charakterystyki	Właściwości użytkowe

Właściwości użytkowe określonego powyżej wyrobu są zgodne z zestawem deklarowanych właściwości użytkowych. Niniejsza deklaracja właściwości użytkowych wydana zostaje zgodnie z Rozporządzeniem (UE) nr 305/2011 na wyłączną odpowiedzialność producenta określonego powyżej.

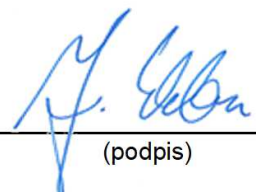
W imieniu producenta podpisał(-a):

**dr Jens Weber**

(nazwisko)

**Bad Laasphe, 24.11.2016**

(miejsce i data wydania)



(podpis)

# DECLARAÇÃO DE DESEMPENHO

N.o **4 - 021 - 160089 - 2016/01**



1.) Código de identificação único do produto-tipo:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Utilização(ões) prevista(s)

**Sistema de injeção para utilização em alvenaria**

3.) Fabricante:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistema(s) de avaliação e verificação da regularidade do desempenho (AVCP):

**Sistema 1**

5.) Documento de Avaliação Europeu:

**ETAG 029**

Avaliação Técnica Europeia

**ETA 16/0089**

Organismo de Avaliação Técnica:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Organismo(s) notificado (s):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Desempenho(s) declarado(s):

a) Resistência mecânica e estabilidade (BWR 1) e segurança e acessibilidade (BWR 4)

Características essenciais	Desempenho
Resistência característica para elementos de aço	Ver Anexo C2
Resistência característica para âncoras em unidades de alvenaria	Ver Anexos C3 - C45
Deslocamentos sob cargas de cisalhamento e tensão	Ver Anexos C4 - C45
Factor de redução para locais de trabalho ( $\beta$ -Factor)	Ver Anexo C1
Distâncias e espaçamento dos bordos	Ver Anexos C3 - C45
Factor de grupo para fechos de grupo	Ver Anexos C3 - C45

# DECLARAÇÃO DE DESEMPENHO

N.º 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Segurança em caso de incêndio (BWR 2)

Características essenciais	Desempenho
Reacção ao fogo	Classe A1
Resistência ao fogo	Nenhum desempenho avaliado

## c) Higiene, saúde e meio ambiente (BWR 3)

Características essenciais	Desempenho

## d) Protecção contra o ruído (BWR 5)

Características essenciais	Desempenho

## e) Economia de energia e retenção de calor (BWR 6)

Características essenciais	Desempenho

## f) Utilização sustentável dos recursos naturais (BWR 7)

Características essenciais	Desempenho

O desempenho do produto identificado acima está em conformidade com o conjunto de desempenhos declarados. A presente declaração de desempenho é emitida, em conformidade com o Regulamento (UE) n.º 305/2011, sob a exclusiva responsabilidade do fabricante identificado acima.

Assinado por e em nome do fabricante por:

**Dr. Jens Weber**

(nome)

**Bad Laasphe, 24.11.2016**

(local e data de emissão)



(assinatura)

# DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 021 - 160089 - 2016/01**



1.) Cod unic de identificare al produsului-tip:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Utilizare (utilizări) preconizată (preconizate):

**Sistem de injecție pentru utilizare în zidărie**

3.) Fabricant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemul (sistemele) de evaluare și de verificare a constanței performanței:

**Sistemul 1**

5.) Documentul de evaluare european:

**ETAG 029**

Evaluarea tehnică europeană:

**ETA 16/0089**

Organismul de evaluare tehnică:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Organism (organisme) notificat(e):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Performanța (performanțe) declarată (declarate):

a) Rezistența mecanică și stabilitatea (BWR 1) și siguranța și accesibilitatea (BWR 4)

Caracteristici esențiale	Performanța produsului
Rezistența caracteristică pentru elementele din oțel	A se vedea anexa C2
Rezistența caracteristică pentru ancorele din elementele de zidărie	A se vedea anexele C3 - C45
Deplasări sub sarcini de forfecare și întindere	A se vedea anexele C4 - C45
Factorul de reducere pentru șantierele de lucru (factorul $\beta$ )	A se vedea anexa C1
Distanțele și spațierea marginilor	A se vedea anexele C3 - C45
Factor de grupare pentru închiderile de grup	A se vedea anexele C3 - C45



# DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 021 - 160089 - 2016/01**

# EJOT®

## b) Siguranța în caz de incendiu (BWR 2)

Caracteristici esențiale	Performanța produsului
Reacția la foc	Clasa A1
Rezistența la foc	Nu se evaluează performanța

## c) Igiena, sănătatea și mediul (BWR 3)

Caracteristici esențiale	Performanța produsului

## d) Protecție împotriva zgomotului (BWR 5)

Caracteristici esențiale	Performanța produsului

## e) Economie de energie și păstrarea căldurii (BWR 6)

Caracteristici esențiale	Performanța produsului

## f) Utilizarea durabilă a resurselor naturale (BWR 7)

Caracteristici esențiale	Performanța produsului

Performanța produsului identificat mai sus este în conformitate cu setul de performanțe declarate. Această declarație de performanță este eliberată în conformitate cu Regulamentul (UE) nr. 305/2011, pe răspunderea exclusivă a fabricantului identificat mai sus.

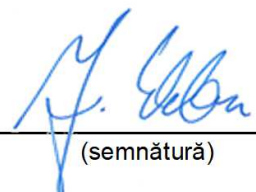
Semnata pentru și în numele fabricantului de către:

**Dr. Jens Weber**

(numele)

**Bad Laasphe, 24.11.2016**

(locul și data emiterii)



(semnătură)

# PRESTANDEDEKLARATION



Nr **4 - 021 - 160089 - 2016/01**

1.) Produkttypens unika identifikationskod:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Avsedd användning/avsedda användningar:

**Injektionssystem för användning i murverk**

3.) Tillverkare:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System för bedömning och fortlöpande kontroll av prestanda:

**System 1**

5.) Europeiskt bedömningsdokument:

**ETAG 029**

Europeisk teknisk bedömning:

**ETA 16/0089**

Tekniskt bedömningsorgan:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Anmält/anmälda organ:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Angiven prestanda:

a) Mekanisk motstånd och stabilitet (BWR 1) och säkerhet och tillgänglighet (BWR 4)

Väsentliga egenskaper	Prestanda
Karakteristisk beständighet för stålelement	Se bilaga C2.
Karakteristiskt motstånd för förankringar i murverk	Se bilagorna C3 - C45.
Förskjutningar vid skjuv- och spänningsbelastning	Se bilagorna C4 - C45.
Reduktionsfaktor för arbetsplatser ( $\beta$ -faktor)	Se bilaga C1.
Avstånd mellan kanter och avstånd mellan kanter	Se bilagorna C3 - C45.
Gruppfaktor för gruppfasten	Se bilagorna C3 - C45.

# PRESTANDEDEKLARATION

Nr 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Säkerhet vid brand (BWR 2)

Väsentliga egenskaper	Prestanda
Reaktion på brand	Klass A1
Motståndskraft mot brand	Ingen resultatbedömning

## c) Hygien, hälsa och miljö (BWR 3)

Väsentliga egenskaper	Prestanda

## d) Skydd mot buller (BWR 5)

Väsentliga egenskaper	Prestanda

## e) Energihushållning och värmehållning (BWR 6)

Väsentliga egenskaper	Prestanda

## f) Hållbar användning av naturresurser (BWR 7)

Väsentliga egenskaper	Prestanda

Prestandan för ovanstående produkt överensstämmer med den angivna prestandan. Denna prestandadeklaration har utfärdats i enlighet med förordning (EU) nr 305/2011 på eget ansvar av den tillverkare som anges ovan.

Undertecknad på tillverkarens vägnar av:

**Dr. Jens Weber**

(namn)

**Bad Laasphe, 24.11.2016**

(plats and datum)



(signatur)

# VYHLÁSENIE O PARAMETROCH



č. **4 - 021 - 160089 - 2016/01**

1.) Jedinečný identifikačný kód typu výrobku:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Zamýšľané použitie/použitia:

**Injekčný systém na použitie v murive**

3.) Výrobca:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Systém(-y) posudzovania a overovania nemennosti parametrov:

**Systém 1**

5.) Európsky hodnotiaci dokument:

**ETAG 029**

Európske technické posúdenie:

**ETA 16/0089**

Orgán technického posudzovania:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Notifikovaný(-é) subjekt(-y):

**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarované parametre:

a) Mechanická odolnosť a stabilita (BWR 1) a bezpečnosť a dostupnosť (BWR 4)

základné charakteristiky	vlastnosti výrobku
Charakteristická odolnosť pre oceľové prvky	Pozri prílohu C2
Charakteristická odolnosť kotiev v murive	Pozri prílohy C3 - C45
Posuny pri šmykovom a ťahovom zaťažení	Pozri prílohy C4 - C45
Redukčný faktor pre pracoviská ( $\beta$ -faktor)	Pozri prílohu C1
Vzdialenosti a rozstupy hrán	Pozri prílohy C3 - C45
Skupinový faktor pre skupinové uzávery	Pozri prílohy C3 - C45

# VYHLÁSENIE O PARAMETROCH

č. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Bezpečnosť v prípade požiaru (BWR 2)

základné charakteristiky	vlastnosti výrobku
Reakcia na požiar	Trieda A1
Odolnosť voči ohňu	Nehodnotí sa žiadna výkonnosť

## c) Hygiena, zdravie a životné prostredie (BWR 3)

základné charakteristiky	vlastnosti výrobku

## d) Ochrana proti hluku (BWR 5)

základné charakteristiky	vlastnosti výrobku

## e) Úspora energie a zadržiavanie tepla (BWR 6)

základné charakteristiky	vlastnosti výrobku

## f) Udržateľné využívanie prírodných zdrojov (BWR 7)

základné charakteristiky	vlastnosti výrobku

Uvedené parametre výrobku sú v zhode so súborom deklarovaných parametrov. Toto vyhlásenie o parametroch sa v súlade s nariadením (EÚ) č. 305/2011 vydáva na výhradnú zodpovednosť uvedeného výrobcu.

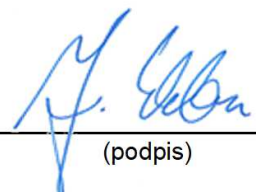
Podpísal(-a) za a v mene výrobcu:

**Dr. Jens Weber**

(meno)

**Bad Laasphe, 24.11.2016**

(miesto a dátum na výstava)



(podpis)

# IZJAVA O LASTNOSTIH

Št. **4 - 021 - 160089 - 2016/01**



1.) Enotna identifikacijska oznaka tipa proizvoda:

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry (033)**

2.) Predvidena uporaba:

**Injekcijski sistem za uporabo v zidovih**

3.) Proizvajalec:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemi ocenjevanja in preverjanja nespremenljivosti lastnosti:

**Sistem 1**

5.) Evropski ocenjevalni dokument:

**ETAG 029**

Evropska tehnična ocena:

**ETA 16/0089**

Organ za tehnično ocenjevanje:

**DIBt - Deutsches Institut für Bautechnik, Berlin**

Priglašeni organi:

**2873 - IFSW - Technische Universität Darmstadt**

6.) Navedene lastnosti:

a) Mehanska odpornost in stabilnost (BWR 1) ter varnost in dostopnost (BWR 4)

Glavne značilnosti	Zmogljivost proizvoda
Značilna odpornost za jeklene elemente	Glej Prilogo C2.
Značilna odpornost za sidra v zidanih enotah	Glej priloge C3 - C45
Pomiki pri strižnih in nateznih obremenitvah	Glej priloge C4 - C45
Faktor zmanjšanja za delovna mesta ( $\beta$ -faktor)	Glej Prilogo C1.
Razdalje in razmiki med robovi	Glej priloge C3 - C45
Faktor skupine za skupinske pritrdilne elemente	Glej priloge C3 - C45

# IZJAVA O LASTNOSTIH

Št. 4 - 021 - 160089 - 2016/01

# EJOT®

## b) Varnost v primeru požara (BWR 2)

Glavne značilnosti	Zmogljivost proizvoda
Odziv na ogenj	Razred A1
Odpornost na ogenj	Uspešnost ni bila ocenjena

## c) Higiena, zdravje in okolje (BWR 3) \ t

Glavne značilnosti	Zmogljivost proizvoda

## d) Zaščita pred hrupom (BWR 5) \ t

Glavne značilnosti	Zmogljivost proizvoda

## e) Varčevanje z energijo in ohranjanje toplote (BWR 6) \ t

Glavne značilnosti	Zmogljivost proizvoda

## f) Trajnostna raba naravnih virov (BWR 7) \ t

Glavne značilnosti	Zmogljivost proizvoda

Lastnosti proizvoda, navedenega zgoraj, so v skladu z navedenimi lastnostmi. Za izdajo te izjave o lastnostih je v skladu z Uredbo (EU) št. 305/2011 odgovoren izključno proizvajalec, naveden zgoraj.

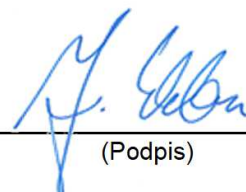
Podpisal za in v imenu proizvajalca:

**Dr. Jens Weber**

(Ime)

**Bad Laasphe, 24.11.2016**

(Kraj in datum izstavitve)



(Podpis)

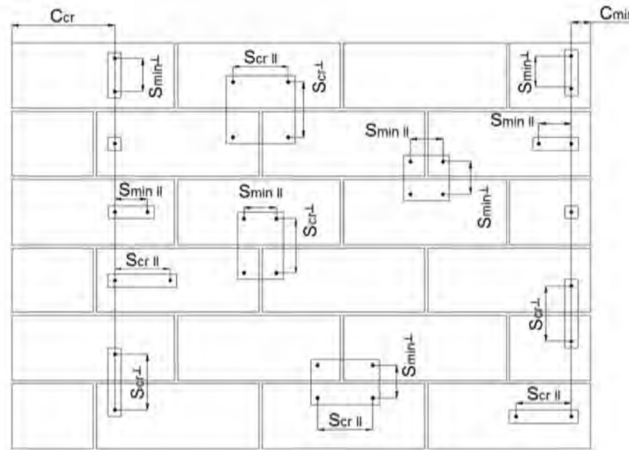
**Table C1:  $\beta$ -factor for job-site testing under tension loading**

Brick-No. and abbreviation	Installation & Use category	$\beta$ -factor					
		$T_a: 40^\circ\text{C} / 24^\circ\text{C}$		$T_b: 80^\circ\text{C} / 50^\circ\text{C}$		$T_c: 120^\circ\text{C} / 72^\circ\text{C}$	
		d/d	w/d w/w	d/d	w/d w/w	d/d	w/d w/w
1 AAC6	For all sizes	0,95	0,86	0,81	0,73	0,81	0,73
2 KS-NF	$d_0 \leq 14$ mm	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm	0,93	0,93	0,87	0,87	0,65	0,65
3 KSL-3DF	$d_0 \leq 12$ mm	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm	0,93	0,93	0,87	0,87	0,65	0,65
4 KSL-12DF	$d_0 \leq 12$ mm	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm	0,93	0,93	0,87	0,87	0,65	0,65
5 MZ-DF	For all sizes	0,86	0,86	0,86	0,86	0,73	0,73
6 Hlz-16DF							
7 Porotherm Homebric							
8 BGV-Thermo							
9 Calibric R+							
10 Urbanbric							
11 Brique creuse C40							
12 Blocchi Leggeri							
13 Doppio Uni							
14 Bloc creux B40							
15 Solid light weight concrete	$d_0 \leq 12$ mm	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm	0,93	0,93	0,87	0,87	0,65	0,65
<b>EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry</b>						<b>Annex C 1</b>	
<b>Performances</b> $\beta$ -factors for job site testing under tension load							



Table C2: Characteristic steel resistance									
Size			IG-M6	IG-M8	IG-M10	M8	M10	M12	M16
<b>Characteristic tension resistance</b>									
steel, property class 4.6	$N_{Rk,s}$	[kN]	-	-	-	15	23	34	63
	$\gamma_{Ms}$	[-]	-			2,0			
steel, property class 4.8	$N_{Rk,s}$	[kN]	-	-	-	15	23	34	63
	$\gamma_{Ms}$	[-]	-			1,5			
steel, property class 5.6	$N_{Rk,s}$	[kN]	10	18	29	18	29	42	79
	$\gamma_{Ms}$	[-]	2,0			2,0			
steel, property class 5.8	$N_{Rk,s}$	[kN]	10	17	29	18	29	42	79
	$\gamma_{Ms}$	[-]	1,5			1,5			
steel, property class 8.8	$N_{Rk,s}$	[kN]	16	27	46	29	46	67	126
	$\gamma_{Ms}$	[-]	1,5			1,5			
Stainless steel A4 / HCR, property class 70	$N_{Rk,s}$	[kN]	14	26	41	26	41	59	110
	$\gamma_{Ms}$	[-]	1,87			1,87			
Stainless steel A4 / HCR, property class 80	$N_{Rk,s}$	[kN]	16	29	46	29	46	67	126
	$\gamma_{Ms}$	[-]	1,6			1,6			
<b>Characteristic shear resistance</b>									
steel, property class 4.6	$V_{Rk,s}$	[kN]	-	-	-	7	12	17	31
	$\gamma_{Ms}$	[-]	-			1,67			
steel, property class 4.8	$V_{Rk,s}$	[kN]	-	-	-	7	12	17	31
	$\gamma_{Ms}$	[-]	-			1,25			
steel, property class 5.6	$V_{Rk,s}$	[kN]	5	9	15	9	15	21	39
	$\gamma_{Ms}$	[-]	1,67			1,67			
steel, property class 5.8	$V_{Rk,s}$	[kN]	5	9	15	9	15	21	39
	$\gamma_{Ms}$	[-]	1,25			1,25			
steel, property class 8.8	$V_{Rk,s}$	[kN]	8	14	23	15	23	34	63
	$\gamma_{Ms}$	[-]	1,25			1,25			
Stainless steel A4 / HCR, property class 70	$V_{Rk,s}$	[kN]	7	13	20	13	20	30	55
	$\gamma_{Ms}$	[-]	1,56			1,56			
Stainless steel A4 / HCR, property class 80	$V_{Rk,s}$	[kN]	8	15	23	15	23	34	63
	$\gamma_{Ms}$	[-]	1,33			1,33			
<b>Characteristic bending moment</b>									
steel, property class 4.6	$M_{Rk,s}$	[Nm]	-	-	-	15	30	52	133
	$\gamma_{Ms}$	[-]	-			1,67			
steel, property class 4.8	$M_{Rk,s}$	[Nm]	-	-	-	15	30	52	133
	$\gamma_{Ms}$	[-]	-			1,25			
steel, property class 5.6	$M_{Rk,s}$	[Nm]	8	19	37	19	37	66	167
	$\gamma_{Ms}$	[-]	1,67			1,67			
steel, property class 5.8	$M_{Rk,s}$	[Nm]	8	19	37	19	37	66	167
	$\gamma_{Ms}$	[-]	1,25			1,25			
steel, property class 8.8	$M_{Rk,s}$	[Nm]	12	30	60	30	60	105	266
	$\gamma_{Ms}$	[-]	1,25			1,25			
Stainless steel A4 / HCR, property class 70	$M_{Rk,s}$	[Nm]	11	26	52	26	52	92	233
	$\gamma_{Ms}$	[-]	1,56			1,56			
Stainless steel A4 / HCR, property class 80	$M_{Rk,s}$	[Nm]	12	30	60	30	60	105	266
	$\gamma_{Ms}$	[-]	1,33			1,33			
<b>EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry</b>						<b>Annex C 2</b>			
<b>Performances</b> Characteristic resistance under tension and shear load – steel failure									

### Spacing and edge distances




- $C_{cr}$  = Characteristic edge distance
- $C_{min}$  = Minimum Edge distance
- $S_{cr}$  = Characteristic spacing
- $S_{min}$  = Minimum spacing
- $S_{cr,||} ; (S_{min,||})$  = Characteristic (minimum) spacing for anchors placed parallel to bed joint
- $S_{cr,⊥} ; (S_{min,⊥})$  = Characteristic (minimum) spacing for anchors placed perpendicular to bed joint

Load direction Anchor position	Tension load	Shear load parallel to free edge	Shear load perpendicular to free edge
Anchors places parallel to bed joint $s_{cr,  } ; (s_{min,  })$			
Anchors places perpendicular to bed joint $s_{cr,⊥} ; (s_{min,⊥})$			
<p> <math>\alpha_{g,N,  } =</math> Group factor in case of tension load for anchors placed parallel to the bed joint  <math>\alpha_{g,V,  } =</math> Group factor in case of shear load for anchors placed parallel to the bed joint  <math>\alpha_{g,N,⊥} =</math> Group factor in case of tension load for anchors placed perpendicular to the bed joint  <math>\alpha_{g,V,⊥} =</math> Group factor in case of shear load for anchors placed perpendicular to the bed joint                 </p> <p>                     Group of two anchors: <math>N_{Rk}^g = \alpha_{g,N} * N_{Rk}</math> and <math>V_{Rk}^g = \alpha_{g,V} * V_{Rk}</math>                      Group of four anchors: <math>N_{Rk}^g = \alpha_{g,N,  } * \alpha_{g,N,⊥} * N_{Rk}</math> and <math>V_{Rk}^g = \alpha_{g,V,  } * \alpha_{g,V,⊥} * V_{Rk}</math>                      (<math>N_{Rk}</math>: <math>N_{Rk,b}</math> or <math>N_{Rk,b,j}</math> for <math>C_{cr}</math>)                      (<math>V_{Rk}</math>: <math>V_{Rk,c}</math>; <math>V_{Rk,c,j}</math>; <math>V_{Rk,b}</math> or <math>V_{Rk,b,j}</math> for <math>C_{cr}</math>)                      (with the relevant <math>\alpha_g</math>)                 </p>			
<b>EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry</b>			<b>Annex C 3</b>
<b>Performances</b> Edge distance and anchor spacing			

**Brick type: Autoclaved Aerated Concrete – AAC6**

**Table C3: Description of the brick**

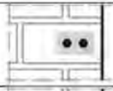
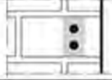
Brick type	Autoclaved Aerated Concrete AAC6	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,6	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	6	
Code	EN 771-4	
Producer (country code)	e.g. Porit (DE)	
Brick dimensions [mm]	499 x 240 x 249	
Drilling method	Rotary	

**Table C4: Installation parameter**

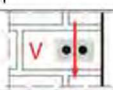

Anchor size		[-]	M8	M10/IG-M6	M12/IG-M8	M16/IG-M10
Effective anchorage depth		[mm]	80	90	100	100
Edge distance	$C_{cr}$	[mm]	1,5*hef			
Minimum edge distance	$C_{min,N}$	[mm]	75			
	$C_{min,V,II} (C_{min,v,\perp})^{1)}$	[mm]	75 (1,5*hef)			
Spacing	$S_{cr}$	[mm]	3*hef			
Minimum spacing	$S_{min}$	[mm]	100			

<sup>1)</sup>  $C_{min,v,II}$  for shear loading parallel to the free edge;  $C_{min,v,\perp}$  for shear loading perpendicular the free edge

**Table C5: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		125 (M8:120)	100	$\alpha_{g,N,II}$	[-]	1,8
		1,5*hef	3*hef			2,0
⊥: anchors placed perpendicular to horizontal joint		75	100	$\alpha_{g,N,\perp}$		1,4
		1,5*hef	3*hef			2,0

**Table C6: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		75	100	$\alpha_{g,V,II}$	[-]	1,2
		1,5*hef	3*hef			2,0
⊥: anchors placed perpendicular to horizontal joint		1,5*hef	3*hef	$\alpha_{g,V,\perp}$		2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

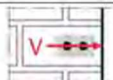
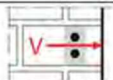
**Performances Autoclaved Aerated Concrete - AAC6**

Description of the brick  
Installation parameters

**Annex C 4**

**Brick type: Autoclaved Aerated Concrete – AAC6**

**Table C7: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$1,5 \cdot h_{ef}$	$3,0 \cdot h_{ef}$	$\alpha_{g,v,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$1,5 \cdot h_{ef}$	$3,0 \cdot h_{ef}$	$\alpha_{g,v,I}$		2,0

**Table C8: Characteristic values of resistance under tension and shear loads**

Anchor size	Effective anchorage depth	Characteristic resistance						
		Use category						
		d/d			w/w w/d			d/d w/d w/w
		40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$	
[mm]	[kN]							
<b>Compressive strength <math>f_b \geq 6 \text{ N/mm}^2</math></b>								
M8	80	2,5 (2,0)	2,5 (1,5)	2,0 (1,2)	2,5 (1,5)	2,0 (1,5)	1,5 (1,2)	6,0
M10/IG-M6	90	4,0 (2,5)	3,0 (2,0)	2,5 (1,5)	3,5 (2,5)	3,0 (2,0)	2,5 (1,5)	10,0
M12/IG-M8	100	5,0 (3,5)	4,0 (3,0)	3,0 (2,5)	4,5 (3,0)	3,5 (2,5)	3,0 (2,5)	10,0
M16/IG-M10	100	6,5 (4,5)	5,5 (3,5)	4,0 (3,0)	5,5 (4,0)	5,0 (3,5)	4,0 (3,0)	10,0

<sup>1)</sup> Values are valid for  $c_{cr}$ , values in brackets are valid for single anchors with  $c_{min}$

<sup>2)</sup> For calculation of  $V_{Rk,c}$  see ETAG029, Annex C;

<sup>3)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C9: Displacements**

Anchor size	$h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
	[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	80	0,9	0,18	0,16	0,32	1,3	0,8	1,20
M10/IG-M6	90	1,4		0,26	0,51	1,8	1,2	1,80
M12/IG-M8	100	1,8	0,08	0,14	0,29	2,1	1,4	2,10
M16/IG-M10	100	2,3		0,19	0,37	2,3	1,5	2,25

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances Autoclaved Aerated Concrete – AAC6**


Installation parameters (continue)

Characteristic values of resistance under tension and shear load / Displacements

**Annex C 5**

**Brick type: Calcium silicate solid brick KS-NF**


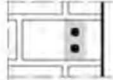
**Table C10: Description of the brick**

Brick type	Calcium silicate solid brick KS-NF	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	2,0	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	10, 20 or 27	
Code	EN 771-2	
Producer (country code)	e.g. Wemding (DE)	
Brick dimensions [mm]	240 x 115 x 71	
Drilling method	Hammer	


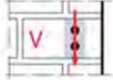
**Table C11: Installation parameter**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	$1,5 \cdot h_{ef}$
Minimum edge distance	$c_{min}$	[mm]	60
Spacing	$s_{cr}$	[mm]	$3 \cdot h_{ef}$
Minimum spacing	$s_{min}$	[mm]	120


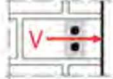
**Table C12: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,N,II}$	[-]	1,0
		140	120			1,5
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,N,I}$	[-]	0,5
		$1,5 \cdot h_{ef}$	120			1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0

**Table C13: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	1,0
		115	120			1,7
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,I}$	[-]	1,0
		$1,5 \cdot h_{ef}$	120			1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0

**Table C14: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,I}$	[-]	1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances calcium solid brick KS-NF**  
Installation parameters

**Annex C 6**

**Brick type: Calcium silicate solid brick KS-NF**

**Table C15: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$ [mm]	Characteristic resistance						
			Use category						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For All temperature range
$h_{ef}$ [mm]	$N_{Rk,b} = N_{Rk,p}^{1)}$			$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$		
[kN]									
<b>Compressive strength <math>f_b \geq 10 \text{ N/mm}^2</math></b>									
M8	-	80	4,5 (2,0)	4,5 (2,0)	3,0 (1,5)	3,5 (1,5)	3,5 (1,5)	2,5 (1,2)	2,5 (1,5)
M10 / IG-M6	-	90	4,5 (2,0)	4,5 (2,0)	3,0 (1,5)	3,5 (1,5)	3,5 (1,5)	2,5 (1,2)	3,0 (2,0)
M12 / IG-M8	-	100	4,5 (2,0)	4,5 (2,0)	3,0 (1,5)	3,5 (1,5)	3,5 (1,5)	2,5 (1,2)	2,5 (1,5)
M16 / IG-M10	-	100	3,5 (1,5)	3,5 (1,5)	2,5 (1,2)	3,0 (1,5)	3,5 (1,5)	2,0 (0,9)	2,5 (1,5)
M8	12x80	80	3,5 (1,5)	3,5 (1,5)	2,5 (1,2)	3,5 (1,5)	3,0 (1,5)	2,5 (1,2)	2,5 (1,5)
M8 / M10 / IG-M6	16x85	85	3,5 (1,5)	3,0 (1,5)	2,0 (0,9)	3,5 (1,5)	3,0 (1,5)	2,5 (1,2)	2,5 (1,5)
	16x130	130	3,5 (1,5)	3,0 (1,5)	2,0 (0,9)	3,5 (1,5)	3,0 (1,5)	2,5 (1,2)	2,5 (1,5)
M12 / M16 / IG-M8 / IG-M10	20x85	85	3,0 (1,5)	2,5 (1,2)	2,0 (0,9)	3,0 (1,5)	2,5 (1,2)	2,0 (0,9)	2,5 (1,5)
	20x130	130	3,0 (1,5)	2,5 (1,2)	2,0 (0,9)	3,0 (1,5)	2,5 (1,2)	2,0 (0,9)	2,5 (1,5)
20x200	200	3,0 (1,5)	2,5 (1,2)	2,0 (0,9)	3,0 (1,5)	2,5 (1,2)	2,0 (0,9)	2,5 (1,5)	
<b>Compressive strength <math>f_b \geq 20 \text{ N/mm}^2</math></b>									
M8	-	80	6,0 (3,0)	5,5 (2,5)	4,0 (2,0)	5,0 (2,5)	5,0 (2,5)	3,5 (1,5)	4,0 (2,5)
M10 / IG-M6	-	90	6,0 (3,0)	5,5 (2,5)	4,0 (2,0)	5,0 (2,5)	5,0 (2,5)	3,5 (1,5)	4,5 (2,5)
M12 / IG-M8	-	100	6,0 (3,0)	5,5 (2,5)	4,0 (2,0)	5,0 (2,5)	5,0 (2,5)	3,5 (1,5)	4,0 (2,5)
M16 / IG-M10	-	100	5,0 (2,5)	5,0 (2,5)	3,5 (1,5)	5,0 (2,5)	5,0 (2,5)	3,5 (1,5)	4,0 (2,5)
M8	12x80	80	5,5 (2,5)	5,0 (2,5)	3,5 (1,5)	4,5 (2,0)	4,5 (2,0)	3,0 (1,5)	4,0 (2,5)
M8 / M10 / IG-M6	16x85	85	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	4,0 (2,5)
	16x130	130	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	4,0 (2,5)
M12 / M16 / IG-M8 / IG-M10	20x85	85	4,0 (2,0)	4,0 (2,0)	3,0 (1,5)	4,0 (2,0)	4,0 (2,0)	3,0 (1,5)	4,0 (2,5)
	20x130	130	4,0 (2,0)	4,0 (2,0)	3,0 (1,5)	4,0 (2,0)	4,0 (2,0)	3,0 (1,5)	4,0 (2,5)
20x200	200	4,0 (2,0)	4,0 (2,0)	3,0 (1,5)	4,0 (2,0)	4,0 (2,0)	3,0 (1,5)	4,0 (2,5)	
<sup>1)</sup> Values are valid for $c_{cr}$ , values in brackets are valid for single anchors with $c_{min}$ <sup>2)</sup> For $c_{cr}$ calculation of $V_{Rk,c}$ see ETAG 029, Annex C; values in brackets $V_{Rk,b} = V_{Rk,c}$ for single anchors with $c_{min}$ <sup>3)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply $V_{Rk,b}$ by 0,8									
<b>EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry</b>							<b>Annex C 7</b>		
<b>Performances calcium solid brick KS-NF</b> Characteristic values of resistance under tension and shear load									

**Brick type: Calcium silicate solid brick KS-NF**

**Table C16: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$ [mm]	Characteristic resistance						
			Use category						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For All temperature range
$h_{ef}$ [mm]	$N_{Rk,b} = N_{Rk,d}^{1)}$			$N_{Rk,b} = N_{Rk,d}^{1)}$			$V_{Rk,b}^{2)3)}$		
[kN]									
<b>Compressive strength <math>f_b \geq 27 \text{ N/mm}^2</math></b>									
M8	-	80	7,0 (3,5)	6,5 (3,0)	5,0 (2,5)	6,0 (3,0)	5,5 (2,5)	4,0 (2,0)	4,5 (2,5)
M10 / IG-M6	-	90	7,0 (3,5)	6,5 (3,0)	5,0 (2,5)	6,0 (3,0)	5,5 (2,5)	4,0 (2,0)	5,5 (3,0)
M12 / IG-M8	-	100	7,0 (3,5)	6,5 (3,0)	5,0 (2,5)	6,0 (3,0)	5,5 (2,5)	4,0 (2,0)	4,5 (2,5)
M16 / IG-M10	-	100	6,0 (3,0)	5,5 (2,5)	4,5 (2,0)	6,0 (3,0)	5,5 (2,5)	4,0 (2,0)	4,5 (2,5)
M8	12x80	80	6,5 (3,0)	6,0 (3,0)	4,5 (2,0)	5,5 (2,5)	5,0 (2,5)	3,5 (1,5)	4,5 (2,5)
M8 /	16x85	85	5,5 (2,5)	5,0 (2,5)	4,0 (2,0)	5,5 (2,5)	5,0 (2,5)	4,0 (2,0)	4,5 (2,5)
M10/ IG-M6	16x130	130	5,5 (2,5)	5,0 (2,5)	4,0 (2,0)	5,5 (2,5)	5,0 (2,5)	4,0 (2,0)	4,5 (2,5)
M12 /	20x85	85	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	4,5 (2,5)
M16 /	20x130	130	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	4,5 (2,5)
IG-M8 / IG-M10	20x200	200	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	5,0 (2,5)	4,5 (2,0)	3,5 (1,5)	4,5 (2,5)

1) Values are valid for  $c_{cr}$ , values in brackets are valid for single anchors with  $c_{min}$   
 2) For  $c_{cr}$  calculation of  $V_{Rk,c}$  see ETAG 029, Annex C; values in brackets  $V_{Rk,b} = V_{Rk,c}$  for single anchors with  $c_{min}$   
 3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C17: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$ [mm]	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
			[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	-	80	2,0	0,15	0,30	0,60	1,7	0,90	1,35
M10 / IG-M6	-	90							
M12 / IG-M8	-	100							
M16 / IG-M10	-	100	1,7	0,15	0,26	0,51	1,7	0,90	1,35
M8	12x80	80							
M8 / M10 / IG-M6	16x85	85	1,4						
	16x130	130		0,21	0,43				
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,3	0,15	0,19	0,39	1,7	0,90	1,35
	20x130	130							
	20x200	200							

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**


**Performances calcium solid brick KS-NF**

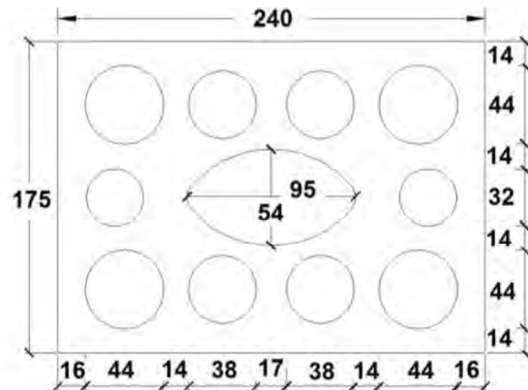
Characteristic values of resistance under tension and shear load (continue)  
 Displacements

**Annex C 8**

**Brick type: Calcium silicate hollow brick KS L-3DF**

**Table C18: Description of the brick**

Brick type	Calcium silicate hollow brick KSL-3DF	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	1,4	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	8, 12 or 14	
Code	EN 771-2	
Producer (country code)	e.g. Wemding (DE)	
Brick dimensions [mm]	240 x 175 x 113	
Drilling method	Rotary	

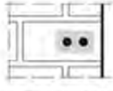
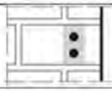


**Table C19: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$c_{min}$	[mm]	60
Spacing	$s_{cr,II}$	[mm]	240
	$s_{cr,\perp}$	[mm]	120
Minimum spacing	$s_{min}$	[mm]	120

<sup>1)</sup> Value in brackets for SH20x85; SH20x130 and SH20x200

**Table C20: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,N,II}$	[-]	1,5
		$c_{cr}$	240			2,0
		160	120			2,0
⊥: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,N,\perp}$	[-]	1,0
		$c_{cr}$	120			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances calcium hollow brick KS L-3DF**

Description of the brick  
Installation parameters

**Annex C 9**



**Brick type: Calcium silicate hollow brick KS L-3DF**

**Table C21: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	1,0
		160	120			1,6
		$c_{cr}$	240			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,I}$	[-]	1,0
		$c_{cr}$	120			2,0

**Table C22: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	1,0
		$c_{cr}$	240			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,I}$	[-]	1,0
		$c_{cr}$	120			2,0

**Table C23: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d			w/d; w/w			d/d; w/d; w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{4)}$
		[mm]	[kN]						
<b>Compressive strength <math>f_b \geq 8 \text{ N/mm}^2</math></b>									
M8	12x80	80	1,5	1,5	1,2	1,5	1,2	0,9	2,5 <sup>2)</sup> (0,9) <sup>3)</sup>
M8 / M10 / IG-M6	16x85	85	1,5	1,5	1,2	1,5	1,5	1,2	4,0 <sup>2)</sup> (1,5) <sup>3)</sup>
	16x130	130	1,5	1,5	1,2	1,5	1,5	1,2	4,0 <sup>2)</sup> (1,5) <sup>3)</sup>
M12 / M16 / IG-M8 / IG-M10	20x85	85	4,5	4,0	3,0	4,5	4,0	3,0	4,0 <sup>2)</sup> (1,5) <sup>3)</sup>
	20x130	130	4,5	4,0	3,0	4,5	4,0	3,0	4,0 <sup>2)</sup> (1,5) <sup>3)</sup>
		20x200	4,5	4,0	3,0	4,5	4,0	3,0	4,0 <sup>2)</sup> (1,5) <sup>3)</sup>
<b>Compressive strength <math>f_b \geq 12 \text{ N/mm}^2</math></b>									
M8	12x80	80	2,0	2,0	1,5	2,0	1,5	1,2	3,0 <sup>2)</sup> (1,2) <sup>3)</sup>
M8 / M10 / IG-M6	16x85	85	2,0	2,0	1,5	2,0	2,0	1,5	4,5 <sup>2)</sup> (1,5) <sup>3)</sup>
	16x130	130	2,5	2,5	1,5	2,5	2,5	1,5	4,5 <sup>2)</sup> (1,5) <sup>3)</sup>
M12 / M16 / IG-M8 / IG-M10	20x85	85	6,0	5,5	4,0	6,0	5,5	4,0	4,5 <sup>2)</sup> (1,5) <sup>3)</sup>
	20x130	130	6,0	5,5	4,0	6,0	5,5	4,0	4,5 <sup>2)</sup> (1,5) <sup>3)</sup>
		20x200	6,0	5,5	4,0	6,0	5,5	4,0	4,5 <sup>2)</sup> (1,5) <sup>3)</sup>

<sup>1)</sup> Values are valid for  $c_{cr}$  and  $c_{min}$

<sup>2)</sup>  $V_{Rk,c,II} = V_{Rk,b}$  valid for shear load parallel to free edge

<sup>3)</sup>  $V_{Rk,c,I} = V_{Rk,b}$  (values in brackets) valid for shear load in direction to free edge

<sup>4)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances calcium hollow brick KS L-3DF**

Installation parameters (continue)

Characteristic values of resistance under tension and shear load

**Annex C 10**

**Brick type: Calcium silicate hollow brick KS L-3DF**

**Table C24: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d			w/d w/w			d/d; w/d; w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{4)}$		
[mm]	[kN]								
<b>Compressive strength <math>f_b \geq 14 \text{ N/mm}^2</math></b>									
M8	12x80	80	2,5	2,5	1,5	2,0	2,0	1,5	3,5 <sup>2)</sup> (1,5) <sup>3)</sup>
M8 / M10 / IG-M6	16x85	85	2,5	2,5	1,5	2,5	2,5	1,5	6,0 <sup>2)</sup> (2,0) <sup>3)</sup>
	16x130	130	2,5	2,5	2,0	2,5	2,5	2,0	6,0 <sup>2)</sup> (2,0) <sup>3)</sup>
M12 / M16 / IG-M8 / IG-M10	20x85	85	6,5	6,0	4,5	6,5	6,0	4,5	6,0 <sup>2)</sup> (2,0) <sup>3)</sup>
	20x130	130	6,5	6,0	4,5	6,5	6,0	4,5	6,0 <sup>2)</sup> (2,0) <sup>3)</sup>
	20x200	200	6,5	6,0	4,5	6,5	6,0	4,5	6,0 <sup>2)</sup> (2,0) <sup>3)</sup>

- 1) Values are valid for  $c_{cr}$  and  $c_{min}$   
 2)  $V_{Rk,c,II} = V_{Rk,b}$  valid for shear load parallel to free edge  
 3)  $V_{Rk,c,I} = V_{Rk,b}$  (values in brackets) valid for shear load in direction to free edge  
 4) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C25: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
			[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	0,71	0,90	0,64	1,29	1,0	1,0	1,50
M8 / M10 / IG-M6	16x85	85					1,7	1,9	2,85
	16x130	130							
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,86	1,67	3,34				
	20x130	130							
	20x200	200							

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**


**Performances calcium hollow brick KS L-3DF**

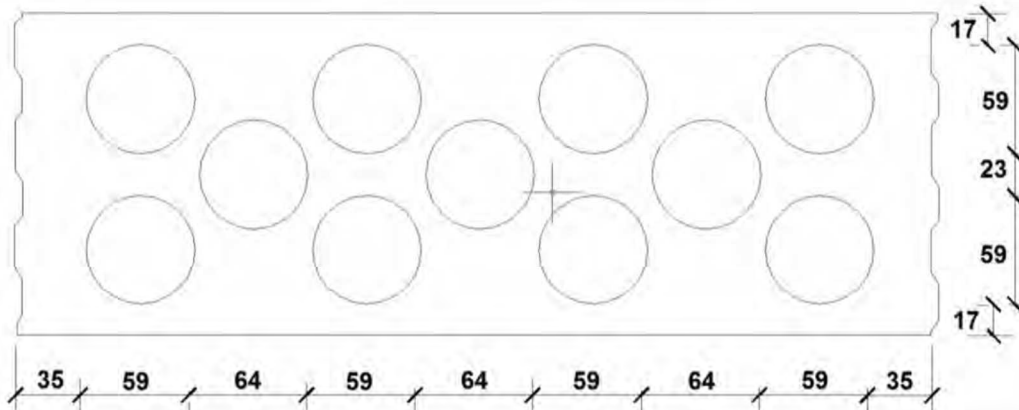
Characteristic values of resistance under tension and shear load (continue)  
 Displacements

**Annex C 11**

**Brick type: Calcium silicate hollow brick KS L-12DF**

**Table C26: Description of the brick**

Brick type	Calcium silicate hollow brick KSL-12DF	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	1,4	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	10, 12 or 16	
Code	EN 771-2	
Producer (country code)	e.g. Wemding (DE)	
Brick dimensions [mm]	498 x 175 x 238	
Drilling method	Rotary	



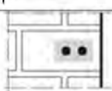
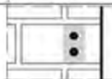
**Table C27: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$C_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$C_{min}^{2)}$	[mm]	100 (120) <sup>1)</sup>
Spacing	$S_{cr,II}$	[mm]	498
	$S_{cr,\perp}$	[mm]	238
Minimum spacing	$S_{min}$	[mm]	120

<sup>1)</sup> Value in brackets for SH20x85 and SH20x130

<sup>2)</sup> For  $V_{Rk,c}$ :  $C_{min}$  according to ETAG 029, Annex C

**Table C28: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		100	120	$\alpha_{g,N,II}$	[-]	1,0
		$C_{cr}$	498			2,0
⊥: anchors placed perpendicular to horizontal joint		100	120	$\alpha_{g,N,\perp}$		1,0
		$C_{cr}$	238			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances Calcium hollow brick KS L-12DF**

Description of the brick  
Installation parameters

**Annex C 12**

**Brick type: Calcium silicate hollow brick KS L-12DF**

**Table C29: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	498	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	238	$\alpha_{g,V,I}$		2,0

**Table C30: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	498	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	238	$\alpha_{g,V,I}$		2,0

**Table C31: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$	$N_{Rk,b} = N_{Rk,D}^{1)}$			$N_{Rk,b} = N_{Rk,D}^{1)}$			$V_{Rk,b}^{2)3)}$
		[mm]	[kN]						
<b>Compressive strength <math>f_b \geq 10 \text{ N/mm}^2</math></b>									
M8	12x80	80	0,6	0,6	0,4	0,5	0,5	0,4	2,5
M8 / M10 / IG-M6	16x85	85	0,6	0,6	0,4	0,6	0,6	0,4	5,5
	16x130	130	2,5	2,5	2,0	2,5	2,5	2,0	5,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,5	1,5	0,9	1,5	1,5	0,9	5,5
	20x130	130	2,5	2,5	2,0	2,5	2,5	2,0	5,5
<b>Compressive strength <math>f_b \geq 12 \text{ N/mm}^2</math></b>									
M8	12x80	80	0,75	0,6	0,5	0,6	0,6	0,4	3,0
M8 / M10 / IG-M6	16x85	85	0,75	0,6	0,5	0,75	0,6	0,5	6,5
	16x130	130	3,0	3,0	2,0	3,0	3,0	2,0	6,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,5	1,5	1,2	1,5	1,5	1,2	6,5
	20x130	130	3,0	3,0	2,0	3,0	3,0	2,0	6,5

<sup>1)</sup> Values are valid for  $c_{cr}$  and  $c_{min}$

<sup>2)</sup> Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 120 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

<sup>3)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances calcium hollow brick KS L-12DF**

Installation parameters (continue)

Characteristic values of resistance under tension and shear load

**Annex C 13**

**Brick type: Calcium silicate hollow brick KS L-12DF**

**Table C32: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$
		[mm]	[kN]						
<b>Compressive strength <math>f_b \geq 16 \text{ N/mm}^2</math></b>									
M8	12x80	80	0,9	0,9	0,6	0,75	0,75	0,5	3,5
M8 / M10 / IG-M6	16x85	85	0,9	0,9	0,6	0,9	0,9	0,6	8,0
	16x130	130	4,0	3,5	2,5	4,0	3,5	2,5	8,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	2,0	2,0	1,5	2,0	2,0	1,5	8,0
	20x130	130	4,0	3,5	2,5	4,0	3,5	2,5	8,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$   
 2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 120 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$   
 3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C33: Displacements**

Anchor size	Sleeve	Effective anchorage depth	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		$h_{ef}$							
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	0,26	0,90	0,23	0,46	1,0	1,3	1,95
M8 / M10 / IG-M6	16x85	85							
	16x130	130	1,14						
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,57		0,51	1,03	2,3	2,5	3,75
	20x130	130	1,14	1,03	2,06				


**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances calcium hollow brick KS L-12DF**  
 Characteristic values of resistance under tension and shear load (continue)  
 Displacements

**Annex C 14**

**Brick type: Clay solid brick Mz-DF**

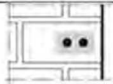
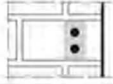
**Table C34: Description of the brick**

Brick type	Clay solid brick Mz-DF	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	1,6	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	10, 20 or 28	
Code	EN 771-1	
Producer (country code)	e.g. Unipor (DE)	
Brick dimensions [mm]	240 x 115 x 55	
Drilling method	Hammer	


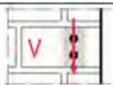
**Table C35: Installation parameter**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	$1,5 \cdot h_{ef}$
Minimum edge distance	$c_{min}$	[mm]	60
Spacing	$s_{cr}$	[mm]	$3 \cdot h_{ef}$
Minimum spacing	$s_{min}$	[mm]	120

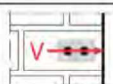
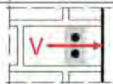
**Table C36: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,N,II}$	[-]	0,7
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,N,I}$		0,5
		$1,5 \cdot h_{ef}$	120			1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$		2,0	

**Table C37: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	0,5
		90	120			1,1
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,I}$		0,5
		$1,5 \cdot h_{ef}$	120			1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0

**Table C38: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	0,5
		$1,5 \cdot h_{ef}$	120			1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,I}$		0,5
		$1,5 \cdot h_{ef}$	120			1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay solid brick Mz-DF**

Description of the brick  
Installation parameters

**Annex C 15**

**Brick type: Clay solid brick Mz-DF**
**Table C39: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$ [mm]		$N_{Rk,b} = N_{Rk,d}^{1)}$ [kN]			$V_{Rk,b}^{2)3)}$	
<b>Compressive strength <math>f_b \geq 10 \text{ N/mm}^2</math></b>						
M8	-	80	3,5 (1,5)	3,5 (1,5)	2,5 (1,2)	3,5 (1,2)
M10 / IG-M6	-	90	3,5 (1,5)	3,5 (1,5)	3,0 (1,5)	3,5 (1,2)
M12 / IG-M8	-	100	4,0 (2,0)	4,0 (2,0)	3,5 (1,5)	3,5 (1,2)
M16 / IG-M10	-	100	4,0 (2,0)	4,0 (2,0)	3,5 (1,5)	5,5 (1,5)
M8	12x80	80	3,5 (1,5)	3,5 (1,5)	3,0 (1,2)	3,5 (1,2)
M8 / M10 / IG-M6	16x85	85	3,5 (1,5)	3,5 (1,5)	3,0 (1,5)	3,5 (1,2)
	16x130	130	3,5 (1,5)	3,5 (1,5)	3,0 (1,5)	3,5 (1,2)
M12 / M16 / IG-M8 / IG-M10	20x85	85	3,5 (1,5)	3,5 (1,5)	3,0 (1,5)	3,5 (1,2)
	20x130	130	3,5 (1,5)	3,5 (1,5)	3,0 (1,5)	3,5 (1,2)
	20x200	200	3,5 (1,5)	3,5 (1,5)	3,0 (1,5)	3,5 (1,2)
<b>Compressive strength <math>f_b \geq 20 \text{ N/mm}^2</math></b>						
M8	-	80	4,5 (2,5)	4,5 (2,5)	4,0 (2,0)	5,0 (1,5)
M10 / IG-M6	-	90	5,5 (2,5)	5,5 (2,5)	4,5 (2,0)	5,0 (1,5)
M12 / IG-M8	-	100	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	5,0 (1,5)
M16 / IG-M10	-	100	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	8,0 (2,5)
M8	12x80	80	4,5 (2,5)	4,5 (2,5)	4,0 (2,0)	5,0 (1,5)
M8 / M10 / IG-M6	16x85	85	5,0 (2,5)	5,0 (2,5)	4,0 (2,0)	5,0 (1,5)
	16x130	130	5,0 (2,5)	5,0 (2,5)	4,0 (2,0)	5,0 (1,5)
M12 / M16 / IG-M8 / IG-M10	20x85	85	5,0 (2,5)	5,0 (2,5)	4,0 (2,0)	5,0 (1,5)
	20x130	130	5,0 (2,5)	5,0 (2,5)	4,0 (2,0)	5,0 (1,5)
	20x200	200	5,0 (2,5)	5,0 (2,5)	4,0 (2,0)	5,0 (1,5)
<b>Compressive strength <math>f_b \geq 28 \text{ N/mm}^2</math></b>						
M8	-	80	5,5 (2,5)	5,5 (2,5)	4,5 (2,5)	5,5 (2,0)
M10 / IG-M6	-	90	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	5,5 (2,0)
M12 / IG-M8	-	100	7,0 (3,5)	7,0 (3,5)	6,0 (3,0)	5,5 (2,0)
M16 / IG-M10	-	100	7,0 (3,5)	7,0 (3,5)	6,0 (3,0)	9,0 (3,0)
M8	12x80	80	5,5 (2,5)	5,5 (2,5)	4,5 (2,5)	5,5 (2,0)
M8 / M10 / IG-M6	16x85	85	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	5,5 (2,0)
	16x130	130	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	5,5 (2,0)
M12 / M16 / IG-M8 / IG-M10	20x85	85	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	5,5 (2,0)
	20x130	130	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	5,5 (2,0)
	20x200	200	6,0 (3,0)	6,0 (3,0)	5,0 (2,5)	5,5 (2,0)
<sup>1)</sup> Values are valid for $c_{cr}$ , values in brackets are valid for single anchors with $c_{min}$ <sup>2)</sup> For $c_{cr}$ calculation of $V_{Rk,c}$ see ETAG 029, Annex C; for $c_{min}$ values in brackets $V_{Rk,b} = V_{Rk,c}$ <sup>3)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply $V_{Rk,b}$ by 0,8						
<b>EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry</b>					<b>Annex C 16</b>	
<b>Performances clay solid brick Mz-DF</b> Characteristic values of resistance under tension and shear load						

**Brick type: Clay solid brick Mz-DF**

**Table C40: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	-	80	1,3	0,15	0,19	0,39	1,9	1,00	1,50
M10 / IG-M6	-	90	1,6		0,24	0,47			
M12 / IG-M8	-	100	1,7		0,26	0,51	2,9		
M16 / IG-M10	-	100							
M8	12x80	80	1,3	0,15	0,19	0,39	1,9	1,00	1,50
M8 / M10 / IG-M6	16x85	85							
	16x130	130							
M12 / M16 / IG-M8 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**


**Performances clay solid brick Mz-DF**  
Displacements

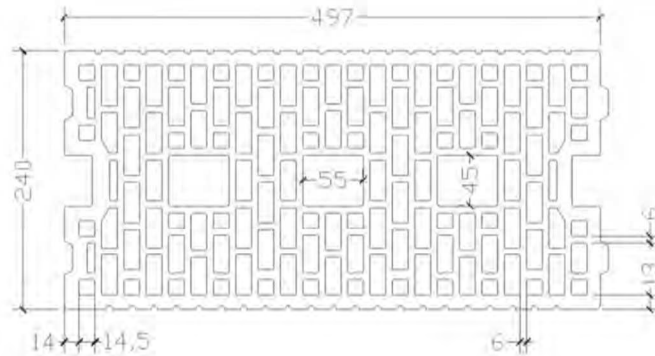
**Annex C 17**



**Brick type: Clay hollow brick HLz-16-DF**

**Table C41: Description of the brick**

Brick type	Clay hollow brick HLz-16-DF	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,8	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	6, 8, 12, 14	
Code	EN 771-1	
Producer (country code)	e.g. Unipor DE)	
Brick dimensions [mm]	497 x 240 x 238	
Drilling method	Rotary	




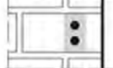
**Table C42: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$C_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$C_{min}$ <sup>2)</sup>	[mm]	100 (120) <sup>1)</sup>
Spacing	$S_{cr,II}$	[mm]	497
	$S_{cr,\perp}$	[mm]	238
Minimum spacing	$S_{min}$	[mm]	100

<sup>1)</sup> Value in brackets for SH20x85; SH20x130 and SH20x200

<sup>2)</sup> For  $V_{Rk,c}$ :  $C_{min}$  according to ETAG 029, Annex C

**Table C43: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$C_{cr}$	100	$\alpha_{g,N,II}$	[-]	1,3
		$C_{cr}$	497			2,0
⊥: anchors placed perpendicular to horizontal joint		$C_{cr}$	100	$\alpha_{g,N,\perp}$		1,1
		$C_{cr}$	238			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick HLz-16DF**

Description of the brick  
Installation parameters

**Annex C 18**

**Brick type: Clay hollow brick HLz-16-DF**

**Table C44: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	497	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	238	$\alpha_{g,V,I}$		2,0

**Table C45: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	497	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	238	$\alpha_{g,V,I}$		2,0

**Table C46: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$	$N_{Rk,b} = N_{Rk,D}^{1)}$			$V_{Rk,b}^{2)3)}$
		[mm]	[kN]			
<b>Compressive strength <math>f_b \geq 6 \text{ N/mm}^2</math></b>						
M8	12x80	80	2,5	2,5	2,0	2,5
M8 / M10/ IG-M6	16x85	85	2,5	2,5	2,0	4,5
	16x130	130	3,5	3,5	3,0	4,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	2,5	2,5	2,0	5,0
	20x130	130	3,5	3,5	3,0	6,0
	20x200	200	3,5	3,5	3,0	6,0
<b>Compressive strength <math>f_b \geq 8 \text{ N/mm}^2</math></b>						
M8	12x80	80	3,0	3,0	2,5	3,0
M8 / M10/ IG-M6	16x85	85	3,0	3,0	2,5	5,5
	16x130	130	4,5	4,5	3,5	5,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	3,0	3,0	2,5	6,0
	20x130	130	4,5	4,5	3,5	7,0
	20x200	200	4,5	4,5	3,5	7,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$   
 2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 125 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$   
 3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick HLz-16DF**

Installation parameters (continue)  
 Characteristic values of resistance under tension and shear load

**Annex C 19**

**Brick type: Clay hollow brick HLz-16-DF**

**Table C47: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,d}^{1)}$			$V_{Rk,b}^{2)3)}$		
[mm]	[kN]					
<b>Compressive strength <math>f_b \geq 12 \text{ N/mm}^2</math></b>						
M8	12x80	80	3,5	3,5	3,0	4,0
M8 / M10/ IG-M6	16x85	85	3,5	3,5	3,0	6,5
	16x130	130	5,0	5,0	4,5	6,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	3,5	3,5	3,0	7,0
	20x130	130	5,0	5,0	4,5	9,0
	20x200	200	5,0	5,0	4,5	9,0
<b>Compressive strength <math>f_b \geq 14 \text{ N/mm}^2</math></b>						
M8	12x80	80	4,0	4,0	3,0	4,0
M8 / M10/ IG-M6	16x85	85	4,0	4,0	3,0	6,5
	16x130	130	5,5	5,5	4,5	6,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	4,0	4,0	3,0	7,0
	20x130	130	5,5	5,5	4,5	9,0
	20x200	200	5,5	5,5	4,5	9,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 125 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C48: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	1,14	0,10	0,11	0,23	1,10	1,20	1,80
M8 / M10/ IG-M6	16x85	85							
	16x130	130	1,57						
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,14		0,11	0,23	1,86	1,50	2,25
	20x130	130	1,57		0,16	0,31	2,57	2,10	3,15
	20x200	200							

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**


**Performances clay hollow brick HLz-16DF**

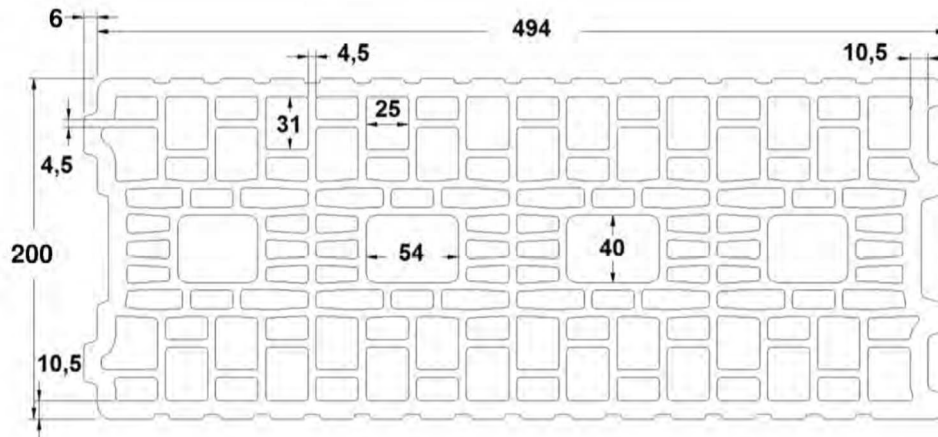
Characteristic values of resistance under tension and shear load (continue)  
Displacements

**Annex C 20**

**Brick type: Clay hollow brick Porotherm Homebric**

**Table C49: Description of the brick**

Brick type	Clay hollow brick Porotherm Homebric	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,7	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	4, 6 or 10	
Code	EN 771-1	
Producer (country code)	e.g. Wienerberger (FR)	
Brick dimensions [mm]	500 x 200 x 299	
Drilling method	Rotary	



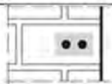
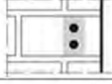
**Table C50: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$c_{min}$ <sup>2)</sup>	[mm]	100 (120) <sup>1)</sup>
Spacing	$s_{cr,II}$	[mm]	500
	$s_{cr,\perp}$	[mm]	299
Minimum spacing	$s_{min}$	[mm]	100

<sup>1)</sup> Value in brackets for SH20x85 and SH20x130

<sup>2)</sup> For  $V_{Rk,c}$ :  $c_{min}$  according to ETAG 029, Annex C

**Table C51: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		200	100	$\alpha_{g,N,II}$	[-]	2,0
		$c_{cr}$	500			2,0
⊥: anchors placed perpendicular to horizontal joint		200	100	$\alpha_{g,N,\perp}$		1,2
		$c_{cr}$	299			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Porotherm Homebric**

Description of the brick  
Installation parameters

**Annex C 21**

**Brick type: Clay silicate hollow brick Porotherm Homebric**

**Table C52: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	299	$\alpha_{g,V,I}$		2,0

**Table C53: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	299	$\alpha_{g,V,I}$		2,0

**Table C54: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			$d/d$ $w/d$ $w/w$			$d/d$ $w/d$ $w/w$
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$ [mm]	$N_{Rk,b} = N_{Rk,d}^{1)}$			$V_{Rk,b}^{2)3)}$		
[kN]						
<b>Compressive strength <math>f_b \geq 4 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,75	2,0
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,75	2,0
	16x130	130	1,2	1,2	0,9	2,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,75	2,5
	20x130	130	1,2	1,2	0,9	2,5
<b>Compressive strength <math>f_b \geq 6 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,9	2,5
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,9	2,5
	16x130	130	1,2	1,2	1,2	2,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,9	3,0
	20x130	130	1,2	1,2	1,2	3,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,b}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 200 \text{ mm}$ :  $V_{Rk,b,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Porotherm Homebric**  
Installation parameters (continue)  
Characteristic values of resistance under tension and shear load

**Annex C 22**

**Brick type: Clay silicate hollow brick Porotherm Homebric**

**Table C55: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,d}^{1)}$			$V_{Rk,b}^{2)3)}$		
[mm]	[kN]					
<b>Compressive strength <math>f_b \geq 10 \text{ N/mm}^2</math></b>						
M8	12x80	80	1,2	1,2	1,2	3,0
M8 / M10/ IG-M6	16x85	85	1,2	1,2	1,2	3,0
	16x130	130	1,5	1,5	1,5	3,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,2	1,2	1,2	4,0
	20x130	130	1,5	1,5	1,5	4,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 200 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C56: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	0,34	0,80	0,27	0,55	0,9	1,20	1,80
M8 / M10/ IG-M6	16x85	85							
	16x130	130	0,43		0,34	0,69	1,0		
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,34		0,27	0,55	1,14		
	20x130	130	0,43	0,34	0,69				


**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

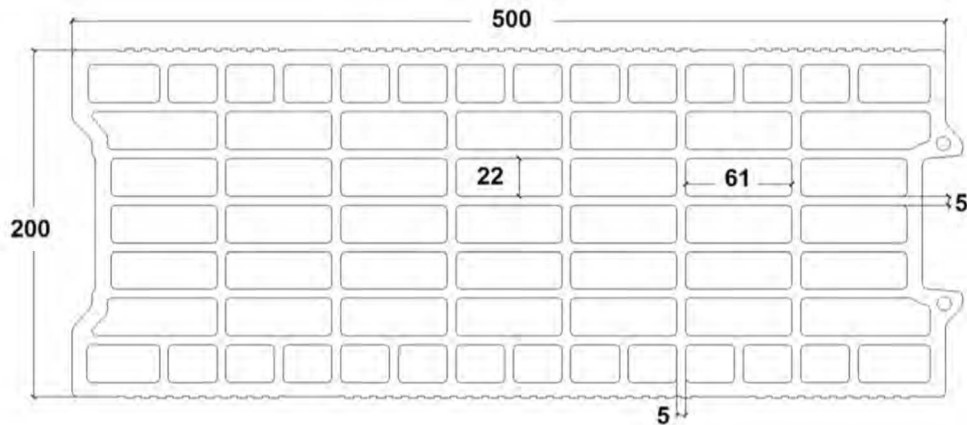
**Performances clay hollow brick Porotherm Homebric**  
 Characteristic values of resistance under tension and shear load (continue)  
 Displacements

**Annex C 23**

**Brick type: Clay hollow brick BGV Thermo**

**Table C57: Description of the brick**

Brick type	Clay hollow brick BGV Thermo	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,6	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	4, 6 or 10	
Code	EN 771-1	
Producer (country code)	e.g. Leroux (FR)	
Brick dimensions [mm]	500 x 200 x 314	
Drilling method	Rotary	



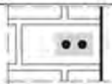
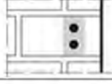
**Table C58: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$c_{min}$ <sup>2)</sup>	[mm]	100 (120) <sup>1)</sup>
Spacing	$s_{cr,II}$	[mm]	500
	$s_{cr,\perp}$	[mm]	314
Minimum spacing	$s_{min}$	[mm]	100

<sup>1)</sup> Value in brackets for SH20x85 and SH20x130

<sup>2)</sup> For  $V_{Rk,c}$ :  $c_{min}$  according to ETAG 029, Annex C

**Table C59: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		200	100	$\alpha_{g,N,II}$	[-]	1,7
		$c_{cr}$	500			2,0
I: anchors placed perpendicular to horizontal joint		200	100	$\alpha_{g,N,\perp}$	[-]	1,1
		$c_{cr}$	314			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

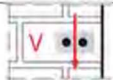

**Performances clay hollow brick BGV Thermo**

Description of the brick  
Installation parameters

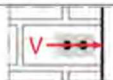
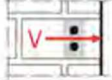
**Annex C 24**

**Brick type: Clay hollow brick BGV Thermo**

**Table C60: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	314	$\alpha_{g,V,I}$		2,0

**Table C61: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	314	$\alpha_{g,V,I}$		2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick BGV Thermo**  
Installation parameters (continue)

**Annex C 25**



**Brick type: Clay hollow brick BGV Thermo**

**Table C62: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$		
[mm]	[kN]					
<b>Compressive strength <math>f_b \geq 4 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,6	0,6	0,6	2,0
M8 / M10/ IG-M6	16x85	85	0,6	0,6	0,6	2,0
	16x130	130	1,2	1,2	0,9	2,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,6	0,6	0,6	2,5
	20x130	130	1,2	1,2	0,9	2,5
<b>Compressive strength <math>f_b \geq 6 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,75	2,5
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,75	2,5
	16x130	130	1,5	1,5	1,2	3,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,75	3,0
	20x130	130	1,5	1,5	1,2	3,0
<b>Compressive strength <math>f_b \geq 10 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,9	3,5
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,9	3,5
	16x130	130	2,0	2,0	1,5	4,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,9	4,0
	20x130	130	2,0	2,0	1,5	4,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 250 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C63: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	0,26	0,80	0,21	0,41	0,7	1,00	1,50
M8 / M10/ IG-M6	16x85	85							
	16x130	130	0,43		0,34	0,69			
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,26		0,21	0,41	0,86		
	20x130	130	0,43	0,34	0,69				

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**


**Performances clay hollow brick BGV Thermo**

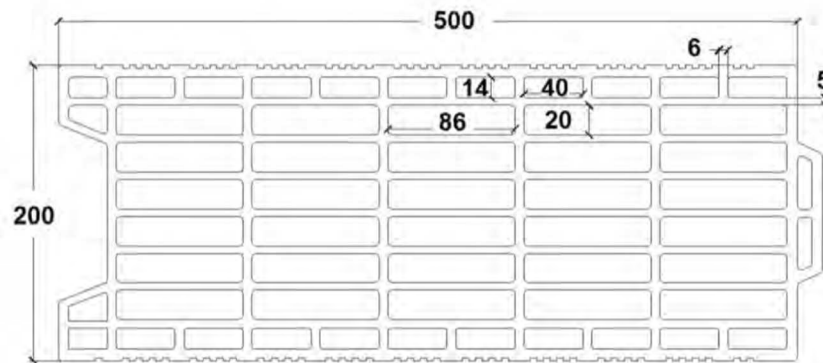
Characteristic values of resistance under tension and shear load  
Displacements

**Annex C 26**

**Brick type: Clay hollow brick Calibric R+**

**Table C64: Description of the brick**

Brick type	Clay hollow brick Calibric R+	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,6	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	6, 9 or 12	
Code	EN 771-1	
Producer (country code)	e.g. Terreal (FR)	
Brick dimensions [mm]	500 x 200 x 314	
Drilling method	Rotary	




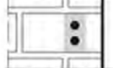
**Table C65: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$c_{min}$ <sup>2)</sup>	[mm]	100 (120) <sup>1)</sup>
Spacing	$s_{cr,II}$	[mm]	500
	$s_{cr,\perp}$	[mm]	314
Minimum spacing	$s_{min}$	[mm]	100

<sup>1)</sup> Value in brackets for SH20x85 and SH20x130

<sup>2)</sup> For  $V_{Rk,c}$ :  $c_{min}$  according to ETAG 029, Annex C

**Table C66: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		175	100	$\alpha_{g,N,II}$	[-]	1,7
		$c_{cr}$	500			2,0
⊥: anchors placed perpendicular to horizontal joint		175	100	$\alpha_{g,N,\perp}$		1,0
		$c_{cr}$	314			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Calibric R+**

Description of the brick  
Installation parameters

**Annex C 27**

**Brick type: Clay hollow brick Calibric R+**

**Table C67: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	314	$\alpha_{g,V,I}$		2,0

**Table C68: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	314	$\alpha_{g,V,I}$		2,0

**Table C69: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$	$N_{Rk,b} = N_{Rk,d}^{1)}$			$V_{Rk,b}^{2)3)}$
		[mm]	[kN]			
<b>Compressive strength <math>f_b \geq 6 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,75	3,0
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,75	4,0
	16x130	130	1,2	1,2	0,9	4,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,75	6,0
	20x130	130	1,2	1,2	0,9	6,0
<b>Compressive strength <math>f_b \geq 9 \text{ N/mm}^2</math></b>						
M8	12x80	80	1,2	1,2	0,9	3,5
M8 / M10/ IG-M6	16x85	85	1,2	1,2	0,9	5,0
	16x130	130	1,5	1,5	1,2	5,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,2	1,2	0,9	7,5
	20x130	130	1,5	1,5	1,2	7,5

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 250 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Calibric R+**

Installation parameters (continue)

Characteristic values of resistance under tension and shear load

**Annex C 28**

**Brick type: Clay hollow brick Calibric R+**

**Table C70: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$		
[mm]	[kN]					
<b>Compressive strength <math>f_b \geq 12 \text{ N/mm}^2</math></b>						
M8	12x80	80	1,2	1,2	0,9	4,0
M8 / M10/ IG-M6	16x85	85	1,2	1,2	0,9	5,5
	16x130	130	1,5	1,5	1,2	5,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,2	1,2	0,9	8,5
	20x130	130	1,5	1,5	1,2	8,5

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 250 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C71: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	0,34	0,80	0,27	0,55	1,0	1,10	1,65
M8 / M10/ IG-M6	16x85	85							
	16x130	130	0,43		0,34	0,69	1,43		
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,34		0,27	0,55	2,14	2,00	
	20x130	130	0,43	0,34	0,69				

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**


**Performances clay hollow brick Calibric R+**

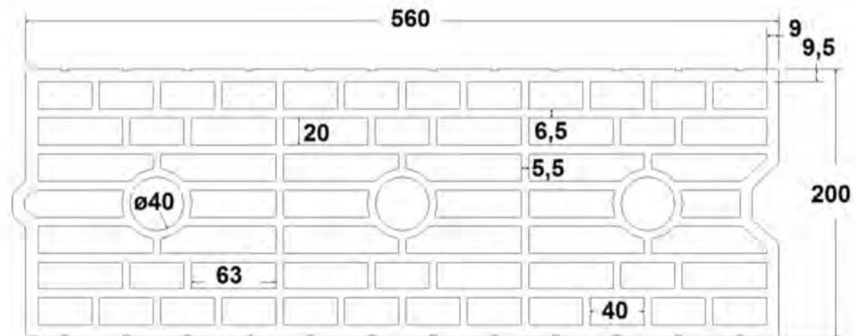
Characteristic values of resistance under tension and shear load (continue)  
Displacements

**Annex C 29**

**Brick type: Clay hollow brick Urbanbric**

**Table C72: Description of the brick**

Brick type	Clay hollow brick Urbanbric	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,7	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	6, 9 or 12	
Code	EN 771-1	
Producer (country code)	e.g. Imerys (FR)	
Brick dimensions [mm]	560 x 200 x 274	
Drilling method	Rotary	



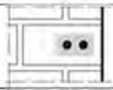
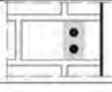
**Table C73: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$C_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$C_{min}$ <sup>2)</sup>	[mm]	100 (120) <sup>1)</sup>
Spacing	$S_{cr,II}$	[mm]	560
	$S_{cr,\perp}$	[mm]	274
Minimum spacing	$S_{min}$	[mm]	100

<sup>1)</sup> Value in brackets for SH20x85 and SH20x130

<sup>2)</sup> For  $V_{Rk,c}$ :  $C_{min}$  according to ETAG 029, Annex C

**Table C74: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		185	100	$\alpha_{g,N,II}$	[-]	1,9
		$C_{cr}$	560			2,0
⊥: anchors placed perpendicular to horizontal joint		185	100	$\alpha_{g,N,\perp}$		1,1
		$C_{cr}$	274			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Urbanbric**

Description of the brick  
Installation parameters

**Annex C 30**

**Brick type: Clay hollow brick Urbanbric**

**Table C75: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	560	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	274	$\alpha_{g,V,I}$		2,0

**Table C76: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	560	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	274	$\alpha_{g,V,I}$		2,0

**Table C77: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$		$N_{Rk,b} = N_{Rk,D}^{1)}$			$V_{Rk,b}^{2)3)}$	
[mm]		[kN]				
<b>Compressive strength <math>f_b \geq 6 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,75	3,0
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,75	3,0
	16x130	130	2,0	2,0	1,5	3,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,75	3,5
	20x130	130	2,0	2,0	1,5	3,5
<b>Compressive strength <math>f_b \geq 9 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,9	4,0
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,9	4,0
	16x130	130	2,5	2,5	2,0	4,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,9	4,5
	20x130	130	2,5	2,5	2,0	4,5

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 190 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Urbanbric**

Installation parameters (continue)

Characteristic values of resistance under tension and shear load

**Annex C 31**

**Brick type: Clay hollow brick Urbanbric**

**Table C78: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$		$N_{Rk,b} = N_{Rk,d}^{1)}$			$V_{Rk,b}^{2)3)}$	
[mm]		[kN]				
<b>Compressive strength <math>f_b \geq 12 \text{ N/mm}^2</math></b>						
M8	12x80	80	1,2	1,2	0,9	4,5
M8 / M10/ IG-M6	16x85	85	1,2	1,2	0,9	4,5
	16x130	130	3,0	3,0	2,5	4,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,2	1,2	0,9	5,0
	20x130	130	3,0	3,0	2,5	5,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 190 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C79: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	0,34	0,80	0,27	0,55	1,30	1,00	1,50
M8 / M10/ IG-M6	16x85	85			0,69	1,37			
	16x130	130	0,27		0,55				
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,34		0,69	1,37	1,43		
	20x130	130	0,86						

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Urbanbric**


Characteristic values of resistance under tension and shear load (continue)

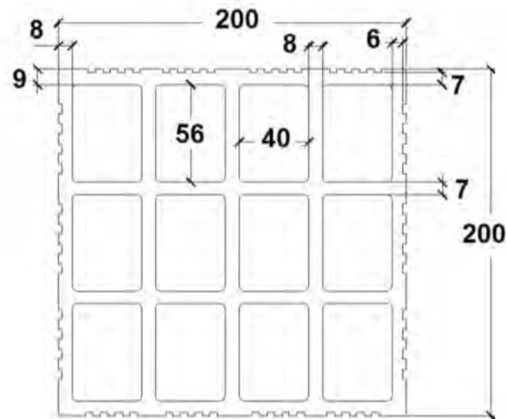
Displacements

**Annex C 32**

**Brick type: Clay hollow brick Brique creuse C40**

**Table C80: Description of the brick**

Brick type	Clay hollow brick Brique creuse C40	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,7	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	4, 8 or 12	
Code	EN 771-1	
Producer (country code)	e.g. Terreal (FR)	
Brick dimensions [mm]	500 x 200 x 200	
Drilling method	Rotary	



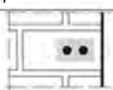
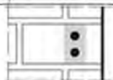
**Table C81: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$c_{min}$ <sup>2)</sup>	[mm]	100 (120) <sup>1)</sup>
Spacing	$s_{cr,  }$	[mm]	500
	$s_{cr,\perp}$	[mm]	200
Minimum spacing	$s_{min}$	[mm]	200

<sup>1)</sup> Value in brackets for SH20x85 and SH20x130

<sup>2)</sup> For  $V_{Rk,c}$ :  $c_{min}$  according to ETAG 029, Annex C

**Table C82: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	200	$\alpha_{g,N,  }$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	200	$\alpha_{g,N,\perp}$		2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Brique creuse C40**

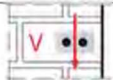
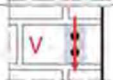
Description of the brick  
Installation parameters

**Annex C 33**

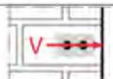
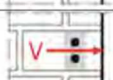


**Brick type: Clay hollow brick Brique creuse C40**

**Table C83: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	200	$\alpha_{g,V,I}$		2,0

**Table C84: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	500	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	200	$\alpha_{g,V,I}$		2,0

**Table C85: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$	$N_{Rk,b} = N_{Rk,D}^{1)}$			$V_{Rk,b}^{2)3)}$
		[mm]	[kN]			
<b>Compressive strength <math>f_b \geq 4 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,6	0,6	0,6	0,9
M8 / M10/ IG-M6	16x85	85	0,6	0,6	0,6	0,9
	16x130	130	0,6	0,6	0,6	0,9
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,6	0,6	0,6	0,9
	20x130	130	0,6	0,6	0,6	0,9
<b>Compressive strength <math>f_b \geq 8 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,9	0,9	0,75	1,2
M8 / M10/ IG-M6	16x85	85	0,9	0,9	0,75	1,2
	16x130	130	0,9	0,9	0,75	1,2
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,9	0,9	0,75	1,2
	20x130	130	0,9	0,9	0,75	1,2

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Brique creuse C40**

Installation parameters (continue)

Characteristic values of resistance under tension and shear load

**Annex C 34**

**Brick type: Clay hollow brick Brique creuse C40**

**Table C86: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,d}^{1)}$			$V_{Rk,b}^{2)3)}$		
[mm]	[kN]					
<b>Compressive strength <math>f_b \geq 12 \text{ N/mm}^2</math></b>						
M8	12x80	80	1,2	1,2	0,9	1,5
M8 / M10/ IG-M6	16x85	85	1,2	1,2	0,9	1,5
	16x130	130	1,2	1,2	0,9	1,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,2	1,2	0,9	1,5
	20x130	130	1,2	1,2	0,9	1,5

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C87: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
			[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	12x80	80	0,17	0,80	0,14	0,27	0,3	0,9	1,35
M8 / M10/ IG-M6	16x85	85			0,11	0,23			
	16x130	130	0,14		0,27				
M12 / M16 / IG-M8 / IG-M10	20x85	85	0,17		0,11	0,23			
	20x130	130	0,14	0,11	0,23				

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**


**Performances clay hollow brick Brique creuse C40**

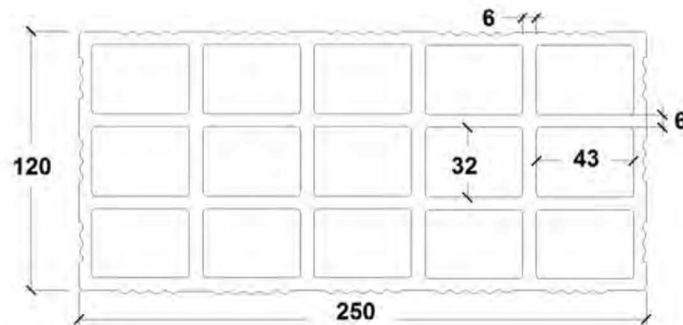
Characteristic values of resistance under tension and shear load (continue)  
Displacements

**Annex C 35**

**Brick type: Clay hollow brick Blocchi Leggeri**

**Table C88: Description of the brick**

Brick type	Clay hollow brick Blocchi Leggeri	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,6	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	4, 6, 8 or 12	
Code	EN 771-1	
Producer (country code)	e.g. Wienerberger (IT)	
Brick dimensions [mm]	250 x 120 x 250	
Drilling method	Rotary	

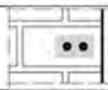
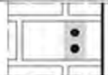


**Table C89: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$C_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$C_{min}$	[mm]	60
Spacing	$S_{cr,II}$	[mm]	250
	$S_{cr,\perp}$	[mm]	120
Minimum spacing	$S_{min}$	[mm]	100

<sup>1)</sup> Value in brackets for SH20x85; SH20x130 and SH20x200

**Table C90: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	100	$\alpha_{g,N,II}$	[-]	1,0
		$C_{cr}$	250			2,0
I: anchors placed perpendicular to horizontal joint		60	100	$\alpha_{g,N,\perp}$		2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Blocchi Leggeri**

Description of the brick  
Installation parameters

**Annex C 36**

**Brick type: Clay hollow brick Blocchi Leggeri**

**Table C91: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$60^{1)}$	$100^{1)}$	$\alpha_{g,V,II}$	[-]	1,0
		$c_{cr}$	250			2,0
I: anchors placed perpendicular to horizontal joint		$60^{1)}$	$100^{1)}$	$\alpha_{g,V,I}$		1,6
		$c_{cr}$	250			2,0

<sup>1)</sup> Only valid for  $V_{Rk,b}$  according to Table C93 and C94 values in brackets

**Table C92: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$60^{1)}$	$100^{1)}$	$\alpha_{g,V,II}$	[-]	1,0
		$c_{cr}$	250			2,0
I: anchors placed perpendicular to horizontal joint		$60^{1)}$	$100^{1)}$	$\alpha_{g,V,I}$		1,6
		$c_{cr}$	250			2,0

<sup>1)</sup> Only valid for  $V_{Rk,b}$  according to Table C93 and C94 values in brackets

**Table C93: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d; w/d; w/w			
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$	$N_{Rk,b} = N_{Rk,D}^{1)}$			$V_{Rk,b}^{4)}$
		[mm]	[kN]			
<b>Compressive strength <math>f_b \geq 4 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,4	0,4	0,3	2,0 <sup>2)</sup> (0,9) <sup>3)</sup>
M8 / M10/ IG-M6	16x85	85				
	16x130	130				
M12 / M16 / IG-M8 / IG-M10	20x85	85				
	20x130	130				
	20x200	200				
<b>Compressive strength <math>f_b \geq 6 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,5	0,5	0,4	2,5 <sup>2)</sup> (1,2) <sup>3)</sup>
M8 / M10/ IG-M6	16x85	85				
	16x130	130				
M12 / M16 / IG-M8 / IG-M10	20x85	85				
	20x130	130				
	20x200	200				

<sup>1)</sup> Values are valid for  $c_{cr}$  and  $c_{min}$

<sup>2)</sup> Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 125 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

<sup>3)</sup> Values in brackets  $V_{Rk,c} = V_{Rk,b}$  for anchors with  $c_{min}$

<sup>4)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Blocchi Leggeri**

Installation parameters (continue)

Characteristic values of resistance under tension and shear load

**Annex C 37**


**Brick type: Clay hollow brick Blocchi Leggeri**

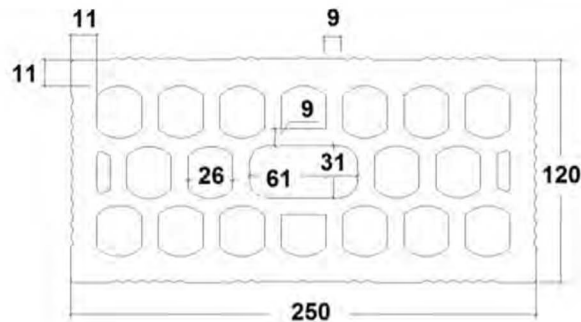
**Table C94: Characteristic values of resistance under tension and shear loads (continue)**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d w/d w/w						
			40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range			
$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{4)}$					
[mm]	[kN]								
<b>Compressive strength <math>f_b \geq 8 \text{ N/mm}^2</math></b>									
M8	12x80	80	0,6	0,6	0,5	3,0 <sup>2)</sup> (1,2) <sup>3)</sup>			
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / M16 / IG-M8 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							
<b>Compressive strength <math>f_b \geq 12 \text{ N/mm}^2</math></b>									
M8	12x80	80	0,6	0,6	0,6	3,5 <sup>2)</sup> (1,5) <sup>3)</sup>			
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / M16 / IG-M8 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							
<sup>1)</sup> Values are valid for $c_{cr}$ and $c_{min}$ <sup>2)</sup> Calculation of $V_{Rk,c}$ see ETAG 029, Annex C, except for shear load parallel to free edge with $c \geq 125 \text{ mm}$ : $V_{Rk,c,II} = V_{Rk,b}$ <sup>3)</sup> Values in brackets $V_{Rk,c} = V_{Rk,b}$ for anchors with $c_{min}$ <sup>4)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply $V_{Rk,b}$ by 0,8									
<b>Table C95: Displacements</b>									
Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
All sizes	All sizes	All sizes	0,17	1,20	0,21	0,41	0,9	1,20	1,80
<b>EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry</b>							<b>Annex C 38</b>		
<b>Performances clay hollow brick Blocchi Leggeri</b> Characteristic values of resistance under tension and shear load (continue) Displacements									

**Brick type: Clay hollow brick Doppio Uni**

**Table C96: Description of the brick**

Brick type	Clay hollow brick Doppio Uni	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,9	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	10, 16, 20 or 28	
Code	EN 771-1	
Producer (country code)	e.g. Wienerberger (IT)	
Brick dimensions [mm]	250 x 120 x 120	
Drilling method	Rotary	



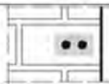
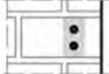
**Table C97: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$C_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$C_{min}$ <sup>2)</sup>	[mm]	60
Spacing	$S_{cr,II}$	[mm]	250
	$S_{cr,\perp}$	[mm]	120
Minimum spacing	$S_{min,II}$	[mm]	100
	$S_{min,\perp}$	[mm]	120

<sup>1)</sup> Value in brackets for SH20x85; SH20x130 and SH20x200

<sup>2)</sup> For  $V_{Rk,c}$ :  $C_{min}$  according to ETAG 029, Annex C

**Table C98: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	100	$\alpha_{g,N,II}$	[-]	1,0
		$C_{cr}$	250			2,0
I: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,N,\perp}$		2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Doppio Uni**

Description of the brick  
Installation parameters

**Annex C 39**

**Brick type: Clay hollow brick Doppio Uni**

**Table C99: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	250	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	120	$\alpha_{g,V,I}$		2,0

**Table C100: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	250	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		$c_{cr}$	120	$\alpha_{g,V,I}$		2,0

**Table C101: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance			
			Use category			
			d/d w/d w/w			
			40°C/24°C	80°C/50°C	120°C/72°C	For All temperature range
$h_{ef}$ [mm]		$N_{Rk,b} = N_{Rk,d}^{1)}$ [kN]			$V_{Rk,b}^{2)3)}$	
<b>Compressive strength <math>f_b \geq 10 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,6	0,6	0,5	1,5
M8 / M10/ IG-M6	16x85	85				
	16x130	130				
M12 / M16 / IG-M8 / IG-M10	20x85	85				
	20x130	130				
	20x200	200				
<b>Compressive strength <math>f_b \geq 16 \text{ N/mm}^2</math></b>						
M8	12x80	80	0,75	0,75	0,6	2,0
M8 / M10/ IG-M6	16x85	85				
	16x130	130				
M12 / M16 / IG-M8 / IG-M10	20x85	85				
	20x130	130				
	20x200	200				

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances clay hollow brick Doppio Uni**

Installation parameters (continue)

Characteristic values of resistance under tension and shear load

**Annex C 40**

**Brick type: Clay hollow brick Doppio Uni**


**Table C102: Characteristic values of resistance under tension and shear loads (continue)**

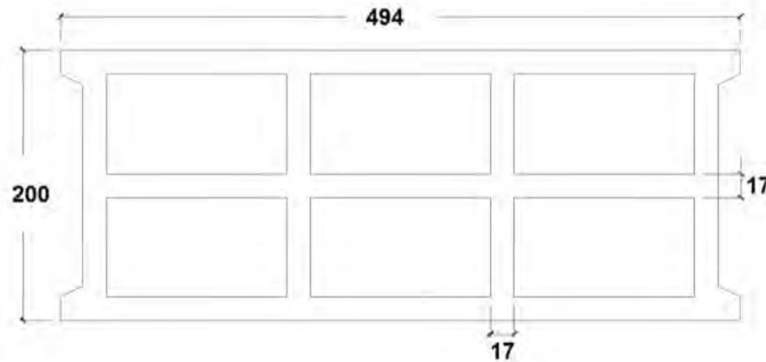
Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d w/d w/w						
			40°C/24°C	80°C/50°C	120°C/72°C	For All temperature range			
$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$					
[mm]	[kN]								
<b>Compressive strength <math>f_b \geq 20 \text{ N/mm}^2</math></b>									
M8	12x80	80	0,9	0,9	0,75	2,0			
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / M16 / IG-M8 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							
<b>Compressive strength <math>f_b \geq 28 \text{ N/mm}^2</math></b>									
M8	12x80	80	1,2	1,2	0,9	2,5			
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / M16 / IG-M8 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							
<p>1) Values are valid for <math>c_{cr}</math> and <math>c_{min}</math></p> <p>2) Calculation of <math>V_{Rk,c}</math> see ETAG 029, Annex C</p> <p>3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply <math>V_{Rk,b}</math> by 0,8</p>									
<b>Table C103: Displacements</b>									
Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
		[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
All sizes	All sizes	All sizes	0,26	1,20	0,31	0,62	0,6	0,3	0,45
<p><b>EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry</b></p> <p><b>Performances clay hollow brick Doppio Uni</b> Characteristic values of resistance under tension and shear load (continue) Displacements</p>							<b>Annex C 41</b>		



**Brick type: Hollow Light weight concrete Bloc creux B40**

**Table C104: Description of the brick**

Brick type	Hollow light weight concrete Bloc creux B40	
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,8	
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	4	
Code	EN 771-3	
Producer (country code)	e.g. Sepa (FR)	
Brick dimensions [mm]	494 x 200 x 190	
Drilling method	Rotary	



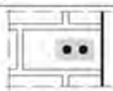
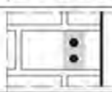
**Table C105: Installation parameters**

Anchor size		[-]	All sizes
Edge distance	$c_{cr}$	[mm]	100 (120) <sup>1)</sup>
Minimum edge distance	$c_{min}$ <sup>2)</sup>	[mm]	100 (120) <sup>1)</sup>
Spacing	$s_{cr,  }$	[mm]	494
	$s_{cr,\perp}$	[mm]	190
Minimum spacing	$s_{min}$	[mm]	100

<sup>1)</sup> Value in brackets for SH20x85 and SH20x130

<sup>2)</sup> For  $V_{Rk,c}$ :  $c_{min}$  according to ETAG 029, Annex C

**Table C106: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
: anchors placed parallel to horizontal joint		100	100	$\alpha_{g,N,  }$	[-]	1,5
		$c_{cr}$	494			2,0
⊥: anchors placed perpendicular to horizontal joint		100	100	$\alpha_{g,N,\perp}$	[-]	1,0
		$c_{cr}$	190			2,0

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances hollow light weight concrete Bloc creux B40**

Description of the brick  
Installation parameters

**Annex C 42**

**Brick type: Hollow Light weight concrete Bloc creux B40**

**Table C107: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		50	100	$\alpha_{g,V,II}$	[-]	1,1
		$c_{cr}$	494			2,0
I: anchors placed perpendicular to horizontal joint		100	100	$\alpha_{g,V,I}$		1,1
		$c_{cr}$	190			2,0

**Table C108: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		$c_{cr}$	494	$\alpha_{g,V,II}$	[-]	2,0
		$c_{cr}$	190			$\alpha_{g,V,I}$

**Table C109: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d			w/d			d/d
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
$h_{ef}$	$N_{Rk,b} = N_{Rk,p}^{1)}$			$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$		
[mm]	[kN]								
<b>Compressive strength <math>f_b \geq 4 \text{ N/mm}^2</math></b>									
M8	12x80	80	1,2	0,9	0,75	0,9	0,9	0,75	3,0
M8 / M10 / IG-M6	16x85	85	1,2	0,9	0,75	1,2	0,9	0,75	3,0
	16x130	130	1,2	0,9	0,75	1,2	0,9	0,75	3,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	1,2	0,9	0,75	1,2	0,9	0,75	3,0
	20x130	130	1,2	0,9	0,75	1,2	0,9	0,75	3,0

1) Values are valid for  $c_{cr}$  and  $c_{min}$

2) Calculation of  $V_{Rk,c}$  see ETAG 029, Annex C, except for shear load parallel to free edge with  $c \geq 250 \text{ mm}$ :  $V_{Rk,c,II} = V_{Rk,b}$

3) The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C110: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
			[mm]	[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]
All sizes	All sizes	All sizes	0,34	0,90	0,31	0,62	0,86	0,9	1,35

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances hollow light weight concrete brick Bloc creux B40**


Installation parameters (continue)

Characteristic values of resistance under tension and shear load / Displacements

**Annex C 43**

**Brick type: Solid light weight concrete brick - LAC**

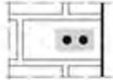
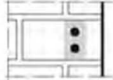
**Table C111: Description of the brick**

Brick type	Solid light weight concrete brick		
Bulk density $\rho$ [kg/dm <sup>3</sup> ]	0,6		
Compressive strength $f_b \geq$ [N/mm <sup>2</sup> ]	2		
Code	EN 771-3		
Producer (country code)	e.g. Bisotherm (DE)		
Brick dimensions [mm]	300 x 123 x 248		
Drilling method	Rotary		

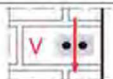

**Table C112: Installation parameter**

Anchor size		[-]	All sizes
Edge distance	$C_{Cr}$	[mm]	$1,5 \cdot h_{ef}$
Minimum edge distance	$C_{min}$	[mm]	60
Spacing	$S_{Cr}$	[mm]	$3 \cdot h_{ef}$
Minimum spacing	$S_{min}$	[mm]	120

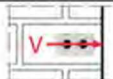
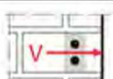
**Table C113: Group factor for anchor group in case of tension loading**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		90	120	$\alpha_{g,N,II}$	[-]	1,1
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0
⊥: anchors placed perpendicular to horizontal joint		124	120	$\alpha_{g,N,\perp}$		1,1
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$			2,0

**Table C114: Group factor for anchor group in case of shear loading parallel to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	0,6
		90	120			2,0
⊥: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,\perp}$		0,6
		124	120			2,0

**Table C115: Group factor for anchor group in case of shear loading perpendicular to free edge**

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		60	120	$\alpha_{g,V,II}$	[-]	0,6
		90	120			2,0
⊥: anchors placed perpendicular to horizontal joint		60	120	$\alpha_{g,V,\perp}$		0,6
		$1,5 \cdot h_{ef}$	120			1,0
		$1,5 \cdot h_{ef}$	$3 \cdot h_{ef}$		2,0	

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances solid light weight concrete brick - LAC**

Description of the brick  
Installation parameters

**Annex C 44**

**Brick type: Solid light weight concrete brick - LAC**

**Table C116: Characteristic values of resistance under tension and shear loads**

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance						
			Use category						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	For all temperature range
		$h_{ef}$ [mm]	$N_{Rk,b} = N_{Rk,p}^{1)}$			$N_{Rk,b} = N_{Rk,p}^{1)}$			$V_{Rk,b}^{2)3)}$
<b>Compressive strength <math>f_b \geq 2 \text{ N/mm}^2</math></b>									
M8	-	80	3,0	2,5	2,0	2,5	2,0	1,5	3,0
M8 / M10/ IG-M6	-	90	3,0	3,0	2,0	2,5	2,5	2,0	3,0
M10 / IG-M8	-	100	3,5	3,0	2,5	3,0	2,5	2,0	3,0
M16 / IG-M10	-	100	3,0	3,0	2,0	3,0	3,0	2,0	3,0
M8	12x80	80	2,5	2,5	2,0	2,5	2,0	1,5	3,0
M8 / M10/ IG-M6	16x85	85	3,0	2,5	2,0	3,0	2,5	2,0	3,0
	16x130	130	3,0	2,5	2,0	3,0	2,5	2,0	3,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	2,5	2,5	2,0	2,5	2,5	2,0	3,0
	20x130	130	2,5	2,5	2,0	2,5	2,5	2,0	3,0
	20x200	200	2,5	2,5	2,0	2,5	2,5	2,0	3,0

<sup>1)</sup> Values are valid for  $c_{cr}$ , values in brackets are valid for single anchors with  $c_{min}$

<sup>2)</sup> For calculation of  $V_{Rk,c}$  see ETAG029, Annex C

<sup>3)</sup> The values are valid for steel 5.6 or greater. For steel 4.6 and 4.8 multiply  $V_{Rk,b}$  by 0,8

**Table C117: Displacements**

Anchor size	Sleeve	Effective anchorage depth $h_{ef}$ [mm]	N	$\delta_N / N$	$\delta_{N0}$	$\delta_{N\infty}$	V	$\delta_{V0}$	$\delta_{V\infty}$
			[kN]	[mm/kN]	[mm]	[mm]	[kN]	[mm]	[mm]
M8	-	80	0,86	0,50	0,43	0,86	0,9	0,25	0,38
M8 / M10/ IG-M6	-	90							
M10 / IG-M8	-	100	0,35	0,35	0,70				
M16 / IG-M10	-	100				0,30			
M8	12x80	80	0,71	0,50	0,36				
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / M16 / IG-M8 / IG-M10	20x85	85				0,35	0,25	0,50	
	20x130	130							
	20x200	200							

**EJOT Chemical Anchor MULTIFIX USF or MULTIFIX USF winter for masonry**

**Performances solid light weight concrete brick - LAC**  
Characteristic values of resistance under tension and shear load  
Displacements

**Annex C 45**