

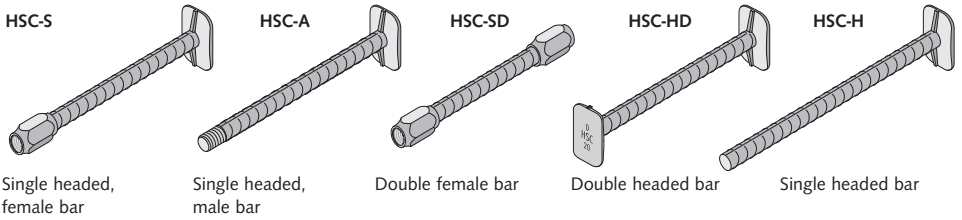
**Stud Connector**  
**Armature pour corbeau**  
**Zbrojenie krótkich**  
**wsporników**



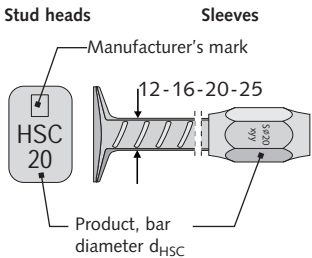
**Assembly Instructions • Montageanleitung • Notice d'utilisation • Instrukcja montażu**

English  
Deutsch  
Français  
Polski

**Product overview**

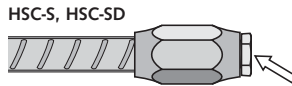


**Identification**



Female and male bars				
Bar diameter $d_s$	12	16	20	25
Thread	M12 x 1.75*	M16 x 2*	M20 x 2,5*	M25 x 2,5
Colour; protection plug	green	orange	light blue	brown

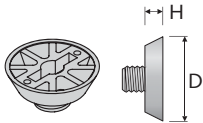
\* = ISO standard metric screw thread (DIN 13-1)



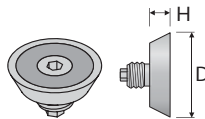
The thread of the HSC socketbars must be covered and protected with a sealing cap.

**Formwork accessories**

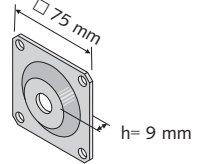
**Nailing plate, plastic**



**Magnetic plate**

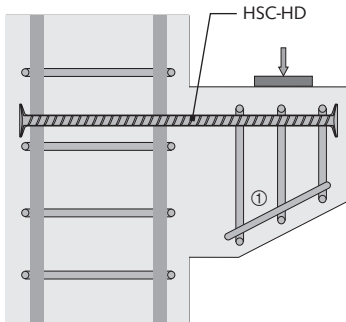


**Nailing plate, metal**



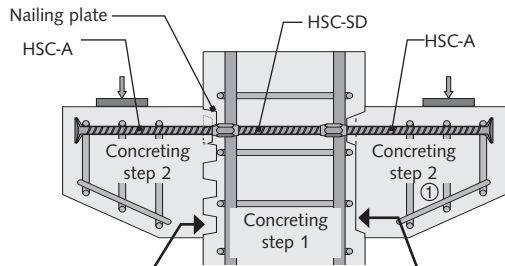
**Installation examples**

**Monolithic solution**



Pos ①: Construction bar for stirrups

**Multi-phase concreting solutions**



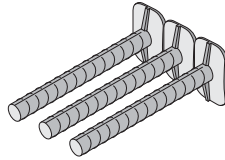
Variant 1: Interlocking joint in accordance with DIN EN 1992-1-1

Variant 2: simplified key joint

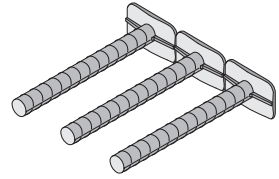
**Mounting positions**

Stud heads can be aligned horizontal or vertically. To ensure installation of the (male) connecting bars, minimum spacing has to be maintained (not necessary for monolithic components). The engineer's specifications are obligatory.

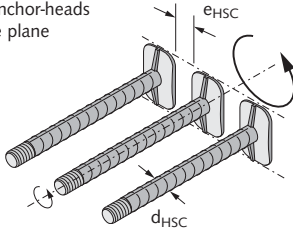
Vertical anchor-head placement



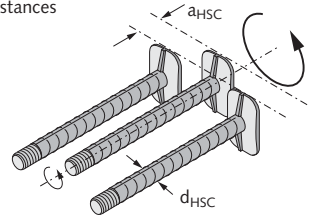
Horizontal anchor-head placement



Variation 1: anchor-heads aligned in one plane



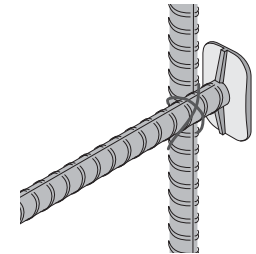
Variation 2: stacked HSC anchors - minimized axial distances



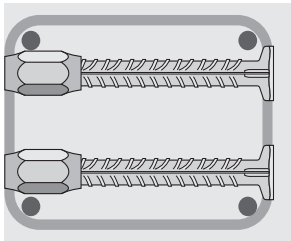
Min. distances to ensure installation (male bars)

$d_{HSC}$ [mm]	$e_{HSC}$ [mm]	$a_{HSC}$ [mm]
12	10	15
16	20	20
20	20	25
25	25	30

Attached to existing reinforcement, e. g. by wire fixing



(Concrete cover)  $c$

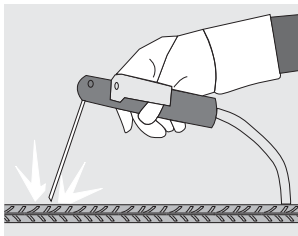


The concrete cover specified in the drawing must also be maintained for the stud heads.

Anchorage in columns:  
The stud-heads are positioned behind the rear longitudinal column reinforcement.



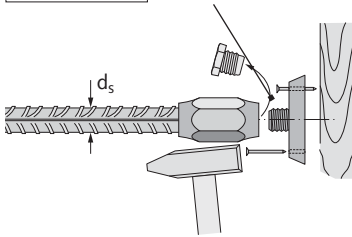
**The engineers specifications (installation position, concrete cover etc.) have to be observed**



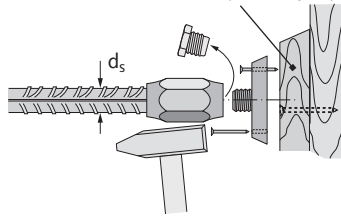
Welding, even spot welding, can impair material properties. For that reason welding and heat application in the head and thread area is not allowed. Other welding, outside of this area has to be carried out according to applicable welding regulations and is the sole responsibility of the welding-contractor.

## Fixing to timber formwork

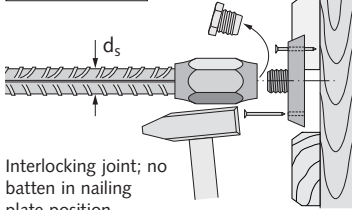
ds 12-16-20 mm Nailing plate, plastic



ds 12-16-20 mm Framework (batten) for simplified keyed joint

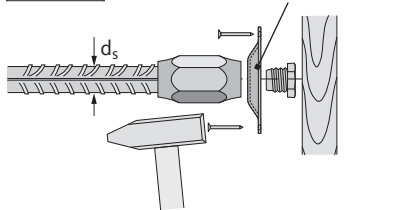


ds 12-16-20 mm

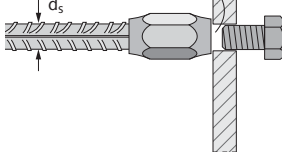


Interlocking joint; no batten in nailing plate position.

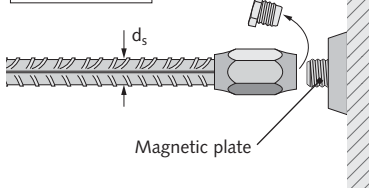
ds 25 mm



## Fixing to steel formwork

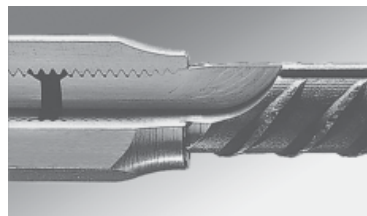
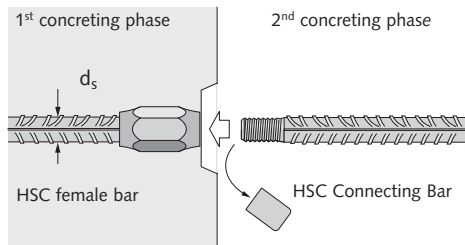
ds 12-16-20 mm Fixing with hex head bolt with ISO thread:  
M12 for ds 12, M16 for ds 16,  
M20 for ds 20

ds 12-16-20 mm



Magnetic plate

## Installing the connecting bars (male)

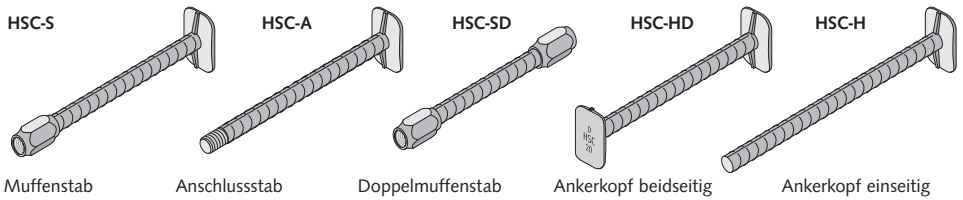


Thread detail of a HSC Connection

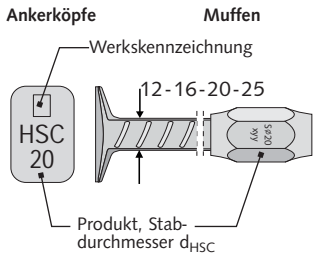
Screw-depth: The HSC (male) connecting bar is turned into the sleeve until the thread is no longer visible. The bar is then rotated until the anchor head is correctly aligned (horizontal or vertical). Refer to the engineer's specifications.

Subsequent bending in the thread is not permitted. **Secure elements properly during shipping to avoid movement in construction joints.**

Produktübersicht



Kennzeichnung

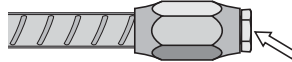


Muffen- und Anschlussstäbe

Stabdurchmesser d <sub>s</sub>	12	16	20	25
Gewinde	M12 x 1,75 *	M16 x 2 *	M20 x 2,5 *	M25 x 2,5
Kennfarbe	grün	orange	hellblau	braun

\* = ISO metrisches Standard Gewinde (DIN 13-1)

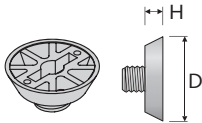
HSC-S, HSC-SD



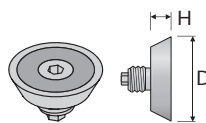
Das Einschraubgewinde der HSC - Muffenstäbe muss mit Gewindeverschlußschraube verschlossen sein.

Schalungszubehör

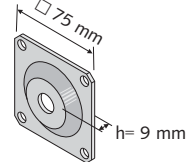
Kunststoffnagelteller



Magnetteller

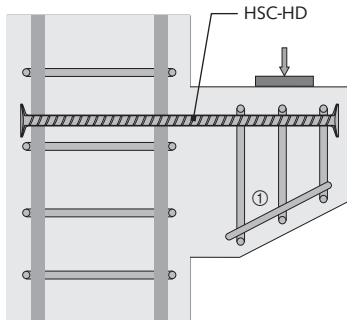


Metall-Nagelplatte



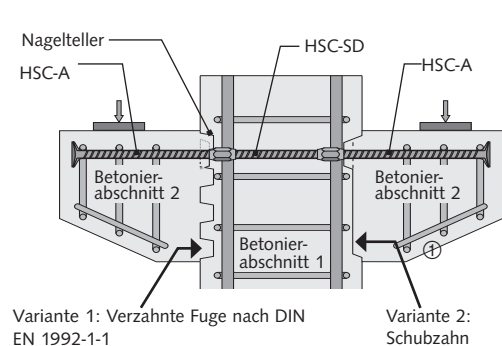
Montagebeispiele

Monolithische Ausführung



Pos ①: Lagesicherung für Bügel

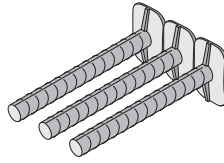
Ausführung in Betonierabschnitten



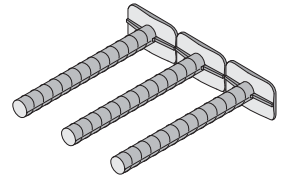
## Einbaulage

Ankerköpfe können horizontal oder vertikal ausgerichtet sein. Zur Gewährleistung der Schraubbarkeit der Anschlussstäbe sind Mindeststababstände einzuhalten (außer monolithische Ausführung). Es gelten die Festlegungen des Planers.

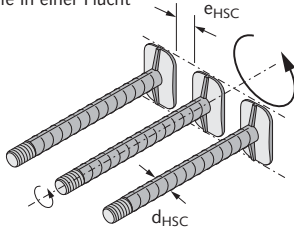
Vertikale Ankerkopfausrichtung



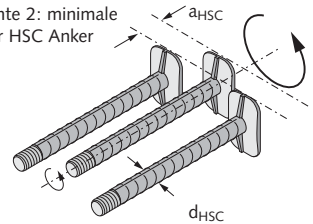
Horizontale Ankerkopfausrichtung



Variante 1: Ankerköpfe in einer Flucht



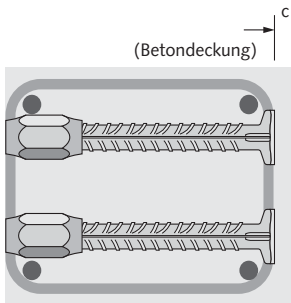
Variante 2: Variante 2: minimale Achsabstände der HSC Anker (gestaffelt)



Mindestabstände zur Gewährleistung der Schraubbarkeit (Anschlussstäbe)

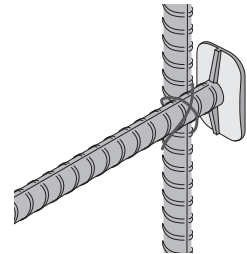
$d_{HSC}$ [mm]	$e_{HSC}$ [mm]	$a_{HSC}$ [mm]
12	10	15
16	20	20
20	20	25
25	25	30

Befestigung an vorhandene Bewehrung, z. B. Anrödeln

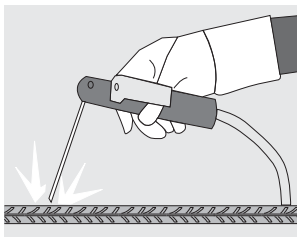


Die auf den Plänen angegebene Betondeckung muss auch für die Ankerköpfe eingehalten werden.

Verankerung in der Stütze: Ankerköpfe müssen bis hinter die Stützenlängsbewehrung geführt werden.



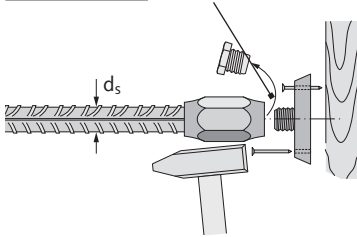
Die Angaben des Planers (Einbaulage, Betondeckung etc.) sind zu beachten.



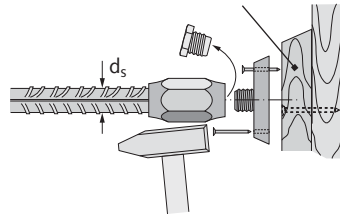
Schweißen, auch Punktschweißen, kann die Materialeigenschaften negativ beeinflussen und ist im Bereich des Gewindes und der Ankerköpfe nicht zulässig. Schweißungen sind nach gültigen Schweißvorschriften durchzuführen und liegen in der Verantwortung des Ausführenden.

## Befestigung an der Holzschalung

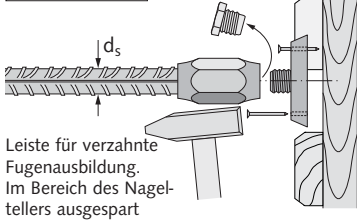
ds 12-16-20 mm Nagelteller, Kunststoff



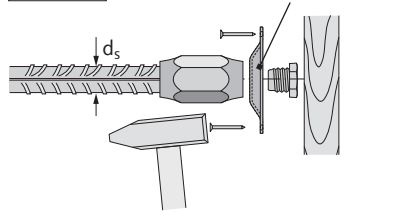
ds 12-16-20 mm Schal Brett für Schubzahn



ds 12-16-20 mm

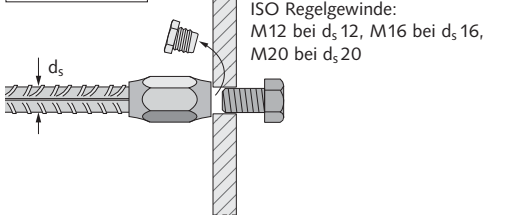


ds 25 mm

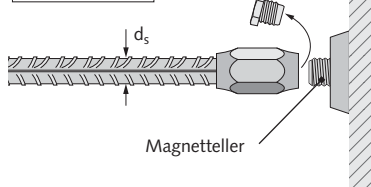


## Befestigung an Stahlschalung

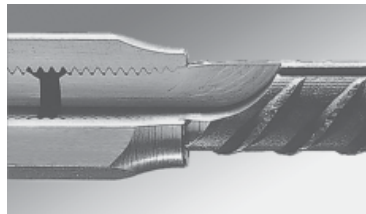
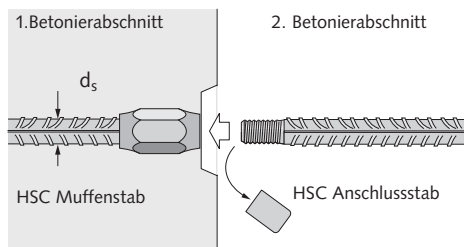
ds 12-16-20 mm



ds 12-16-20 mm



## Einschrauben der Anschlussstäbe

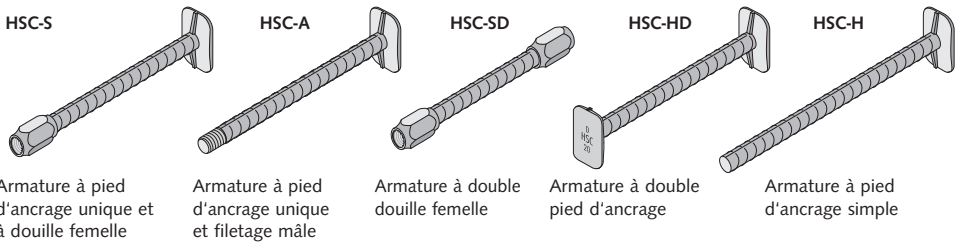


Schnitt durch einen HSC-Anschluss

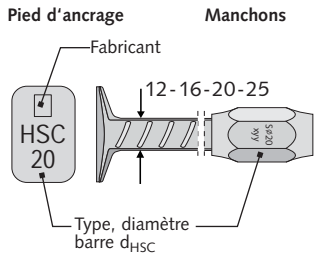
Einschraubtiefe: Der HSC-Anschlussstab wird eingeschraubt, bis das gesamte Gewinde von der Schraubmuffe verdeckt ist. Danach darf der Stab noch gedreht werden, bis der Ankerkopf die richtige Orientierung (horizontal/

vertikal) angenommen hat. Die Angaben des Planers sind zu beachten. Das Nachbiegen der Stäbe im Gewindebereich ist nicht zulässig. **Ein Klaffen der Betonierfuge während des Transportes ist zu verhindern.**

Aperçu des produits



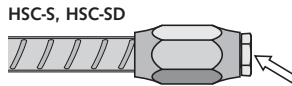
Identification



Armatures mâles et manchons femelles

Diamètre de barre $d_s$	12	16	20	25
Diamètre de la barre	M12 x 1,75 *	M16 x 2 *	M20 x 2,5 *	M25 x 2,5
Couleur du bouchon de protection	vert	orange	bleu clair	marron

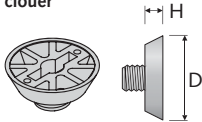
\* = Filetage à pas métrique standard (ISO)



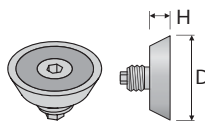
Les armatures HSC avec douille femelle sont livrées avec un bouchon de protection monté dans les usines Halfen

Accessoires de coffrage

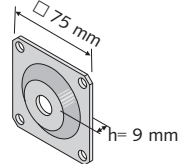
Fixation en plastique à clouer



Fixation magnétique

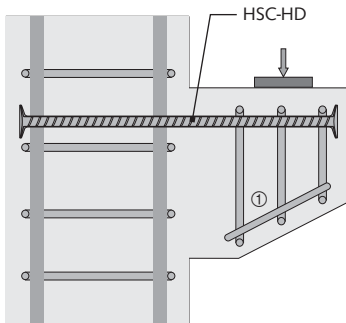


Fixation en acier à clouer



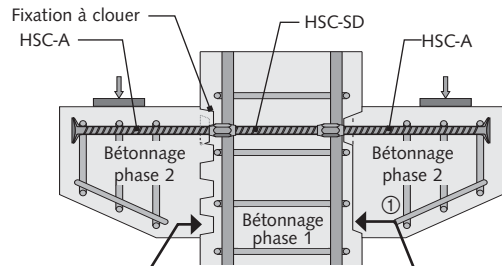
Exemples d'utilisation

Solution avec corbeau monolithique



① : Maintenir les étriers en position

Solution avec corbeau rapporté



Variante 1: Joint cranté suivant la DIN EN 1992-1-1

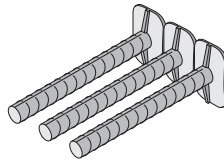
Variante 2: joint simplifié



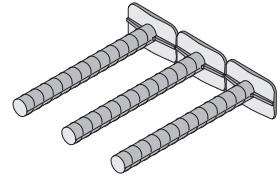
## Disposition

Les pieds des armatures HSC peuvent être placés indifféremment dans le sens vertical ou horizontal suivant les recommandations du bureau d'étude.

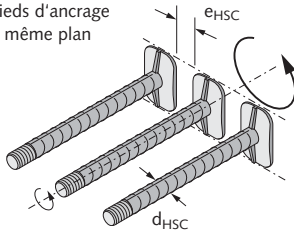
Pied d'ancrage vertical



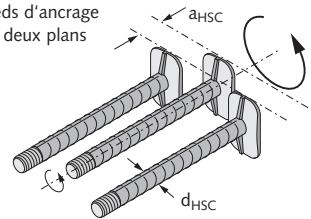
Pied d'ancrage horizontal



Variante 1 : Pieds d'ancrage alignés sur un même plan



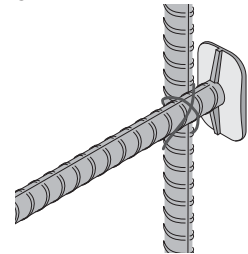
Variante 2 : Pieds d'ancrage positionnés sur deux plans différents



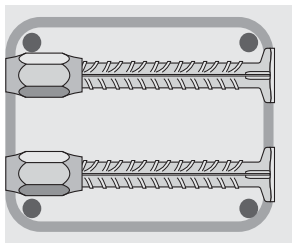
Entraxe minimum entre les pieds d'ancrage (ancres verticales).

$d_{HSC}$ [mm]	$e_{HSC}$ [mm]	$a_{HSC}$ [mm]
12	10	15
16	20	20
20	20	25
25	25	30

L'armature HSC à double pied d'ancrage peut être fixée au ferrailage vertical du poteau, par exemple avec des ligatures



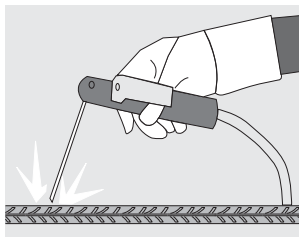
(Enrobage)  $c$



L'enrobage du béton ( $c$ ) stipulé dans les schémas doit être également respecté à l'arrière du pied. Le pied des armatures doit être positionné derrière les aciers verticaux du poteau.



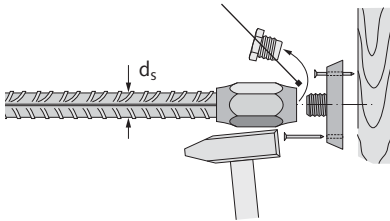
Les recommandations des ingénieurs doivent être respectées (positionnement, enrobage de béton etc.)



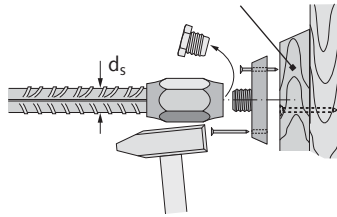
La soudure, même la soudure par points, peut altérer les propriétés du matériau. Pour cette raison, il n'est pas autorisé de souder ou d'appliquer toute source de chaleur sur le pied d'ancrage. En dehors du pied d'ancrage, toute soudure doit être effectuée conformément aux réglementations en vigueur et suivant les recommandations de l'entreprise de construction.

## Fixation sur coffrage en bois

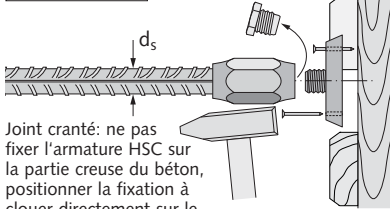
ds 12-16-20 mm Fixation en plastique à clouer



ds 12-16-20 mm coffrage (latte) joint simple

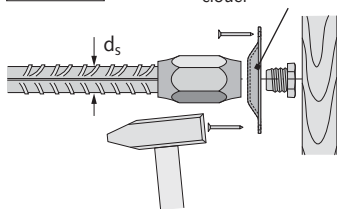


ds 12-16-20 mm



Joint cranté: ne pas fixer l'armature HSC sur la partie creuse du béton, positionner la fixation à clouer directement sur le coffrage

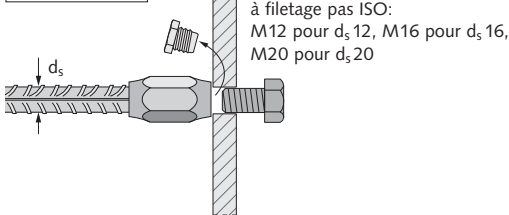
ds 25 mm



Fixation en acier à clouer

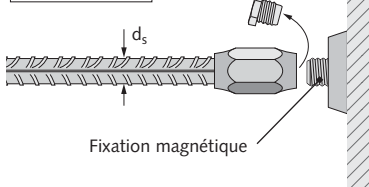
## Fixation sur coffrage en acier

ds 12-16-20 mm



Fixation avec vis tête hexagonale à filetage pas ISO:  
M12 pour ds 12, M16 pour ds 16,  
M20 pour ds 20

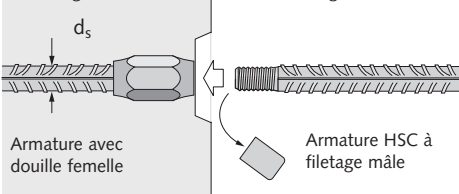
ds 12-16-20 mm



Fixation magnétique

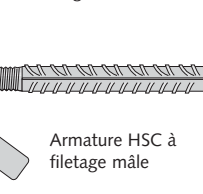
## Mise en place des armatures HSC à filetage mâle

1 ere phase de bétonnage



Armature avec douille femelle

2 eme phase de bétonnage



Armature HSC à filetage mâle



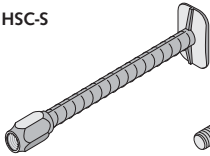
Jonction avec le manchon femelle HSC

Profondeur de vissage : lorsque l'armature HSC mâle est vissée à fond dans le manchon femelle, le filetage n'est plus visible. La barre doit alors être tournée jusqu'à ce que le pied d'ancrage soit correctement aligné (horizontalement ou verticalement). Se référer aux recommandations du bureau d'étude.

Il n'est pas possible de plier la barre au niveau du filetage.  
**Fixer correctement les éléments lors du transport pour éviter tout mouvement dans les joints de construction.**

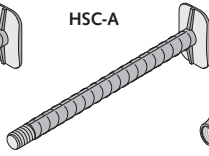
Przegląd produktów

HSC-S



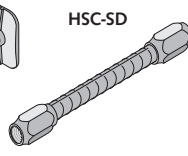
Trzpień z tuleją gwintowaną

HSC-A



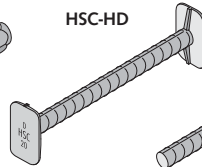
Trzpień zakończony gwintem

HSC-SD



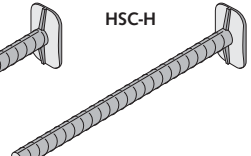
Trzpień zakończony tulejkami

HSC-HD



Trzpień zakończony główkami

HSC-H

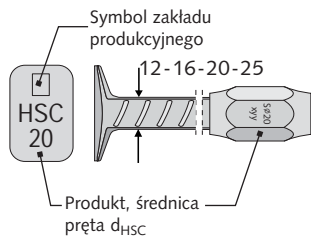


Trzpień zakończony główką

Oznaczenie

Główka trzpienia

Tuleja gwintowana

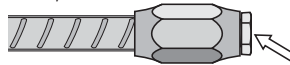


Trzpień gwintowany i z tulejami

Średnica pręta $d_s$	12	16	20	25
Gwint	M12 x 1.75 *	M16 x 2 *	M20 x 2,5 *	M25 x 2,5
Kolor zatyczek gwintów	Zielony	Pomarańcz	Niebieski	Brązowy

\* = Gwinty metryczne ISO (DIN 13-1)

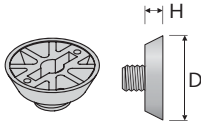
HSC-S, HSC-SD



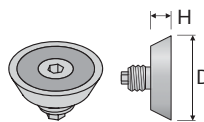
Gwint wewnętrzny tulei musi być zabezpieczony śrubą uszczelniającą.

Asortyment do szalowania

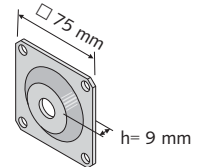
Krażek montażowy przybijany



Krażek montażowy magnetyzny

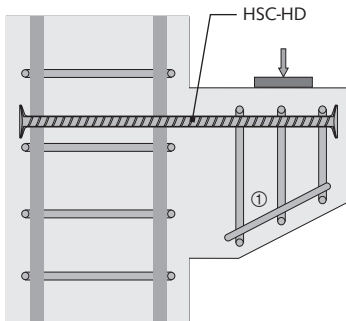


Płytki montażowa przybijana



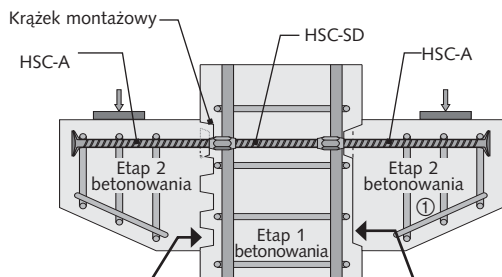
Przykłady zastosowań

Połączenie monolityczne



Pos ①: Stabilizacja położenia strzemion

Połączenie wrębowe



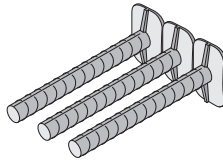
Wariant 1: Połączenie z wrębami DIN EN 1992-1-1

Wariant 2: Połączenie na wrąb

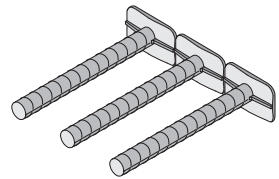
## Ułożenie zbrojenia

Główki trzpieni można układać pionowo lub poziomo. W celu zapewnienia montażu trzpieni gwintowanych, należy przestrzegać minimalnych rozstawów trzpieni (nie dotyczy połączeń monolitycznych). Obowiązują ustalenia projektanta.

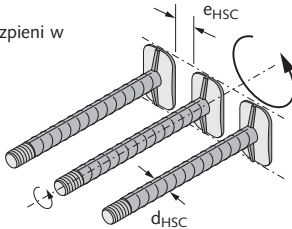
Pionowe ułożenie główek trzpieni



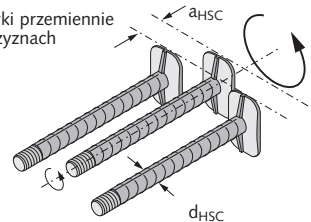
Poziome ułożenie główek trzpieni



Wariant 1: Główki trzpieni w jednej płaszczyźnie



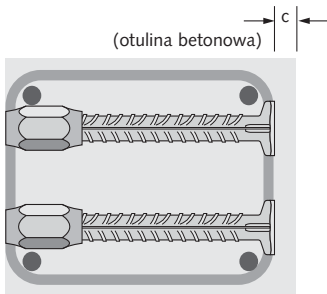
Wariant 2: Główki przemiennie w dwóch płaszczyznach



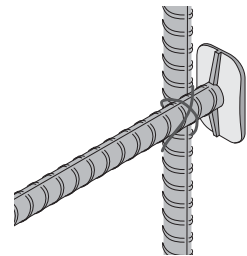
Minimalne odstępki trzpieni gwintowanych zapewniających ich montaż

$d_{HSC}$ [mm]	$e_{HSC}$ [mm]	$a_{HSC}$ [mm]
12	10	15
16	20	20
20	20	25
25	25	30

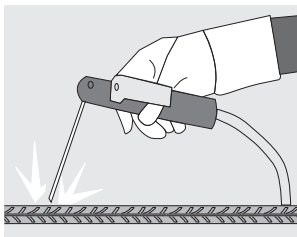
Mocowanie do istniejącego zbrojenia drutem wiązkowym.



Projektowa otulina betonowa musi być także zachowana dla główek trzpieni. Zakotwienie w słupie: główki trzpieni muszą zachodzić za zbrojenie podłużne słupa.



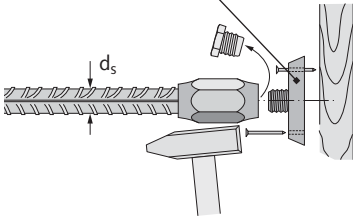
Należy przestrzegać wytycznych projektowych (rozmięszczenie zbrojenia, otulina betonowa, itd.).



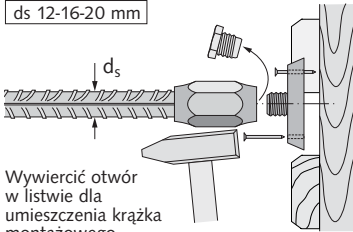
Spawanie, także punktowe, może negatywnie wpływać na właściwości materiału, dlatego w obszarze gwintu oraz główki jest zabronione. Spawanie poza wymienionymi obszarami wykonuje się zgodnie z aktualnymi przepisami i wiedzą techniczną, na odpowiedzialność wykonującego.

## Mocowanie do szalunku drewnianego

$d_s$  12-16-20 mm Przybijany krążek montażowy z tworzywa.

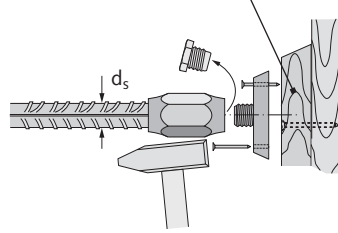


$d_s$  12-16-20 mm

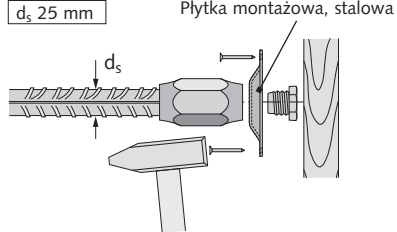


Wywiercić otwór w listwie dla umieszczenia krążka montażowego.

$d_s$  12-16-20 mm Deskowanie połączenia na wręb



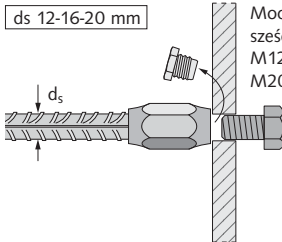
$d_s$  25 mm



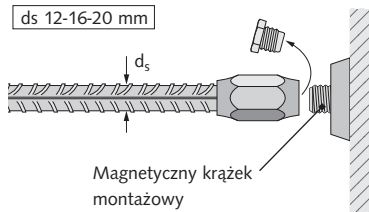
Płytkę montażową, stalową

## Mocowanie do szalunku stalowego

$d_s$  12-16-20 mm Mocowanie za pomocą sześciokątnej śruby metrycznej: M12 dla  $d_s$  12, M16 dla  $d_s$  16, M20 dla  $d_s$  20



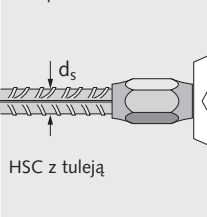
$d_s$  12-16-20 mm



Magnetyczny krążek montażowy

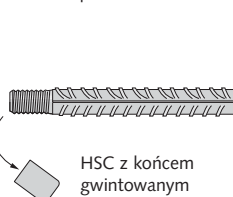
## Montaż trzpieni gwintowanych

1 etap betonowania



HSC z tuleją

2 etap betonowania



HSC z końcem gwintowanym



Przekrój skręconego połączenia

Głębokość wkręcenia: gwintowany trzpień HSC wkręcać do momentu całkowitego schowania się gwintu w tulei. Następnie (jeżeli wymagane) obrócić trzpień, celem prawidłowego położenia główki trzpienia (pionowego lub

poziomego), zgodnie z danymi projektowymi. Doginanie pręta w strefie gwintu zabronione. **Złącze wrębowe należy zabezpieczyć na czas transportu.**



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