

HALFEN HLB Loop Box

Boîtier à boucles de clavetage
HALFEN HLB

HALFEN HLB zestawy łączące



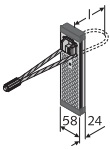
Assembly Instructions • Montageanleitung • Notice d'utilisation • Instrukcja montażu



HALFEN
YOUR BEST CONNECTIONS

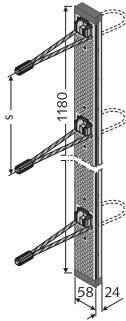
Identification

Single Loop Box

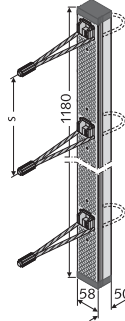


HLB S

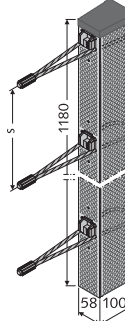
Multi Loop Box



HLB M 20

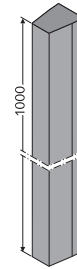


HLB M 50



HLB M 100

HLB Spacer

HLB Spacer 20
HLB Spacer 50
HLB Spacer 100HLB MIX
Joint filling
grout

(See separate instructions for preparation HLB MIX.)

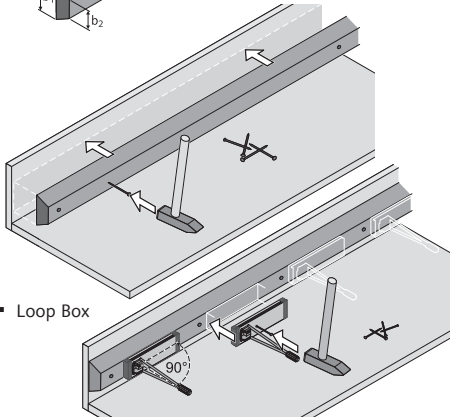
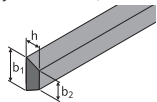
Fixing to the formwork

Single Loop Box

- Timber batten (by contractor)

[mm]	b ₁	b ₂	h
HLB S	>55	55	*

*) depending on loop length l



- Loop Box

Fixing to timber formwork:

- nailing
- glueing (adhesive tape, hot glue)

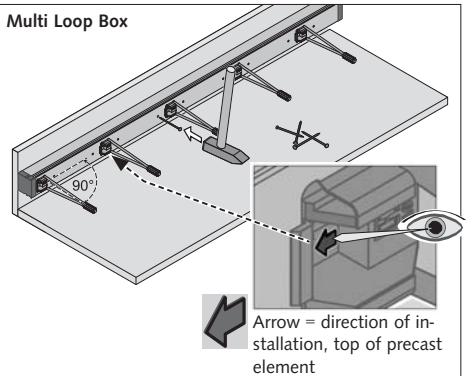
Fixing to steel formwork:

- glueing (adhesive tape, hot glue)
- magnet fixing

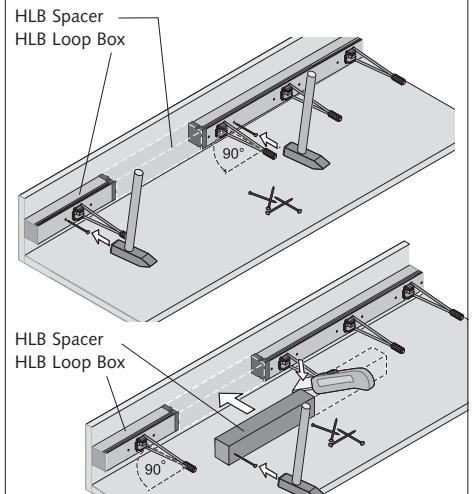
Cutting HLB Spacers:

Take the required measurement and cut the HLB Spacer to length using a customary cutter or sharp knife.

Multi Loop Box



Multi Loop Box + Spacer



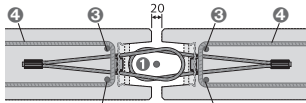
Adjustment, installation of additional reinforcement

Installation tolerances according to official approvals, recommended also for applications as constructive connections.

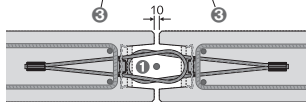
Horizontal:

Gap width:

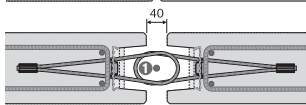
Regular: 20 mm



Minimum: 10 mm



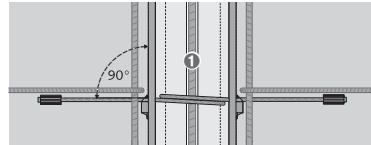
Maximum: 40 mm



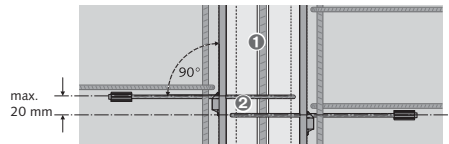
Vertical:

Alignment of Loop Boxes:

Regular case: Loops aligned axially at the same level



Vertical tolerance: max.: 20 mm



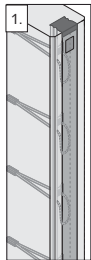
Installation of additional reinforcement:

Additional reinforcement must be installed following the reinforcement drawing and attached to the structural reinforcement.

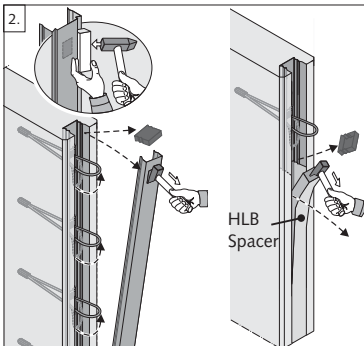
- ① Bar B500A, diam. 12 mm
- ② A vertical tolerance of 20 mm maximum is permitted.
Wire binding of loops is not compulsory.
- ③ Bar B500A, diam. 10 mm
- ④ StIRRUP B500A, diam. 8 mm, anchoring acc. DIN 1045-1

Welding on HLB elements is not permitted!

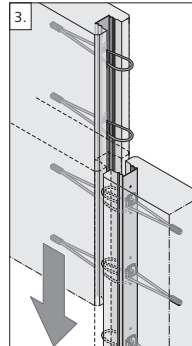
On the construction site



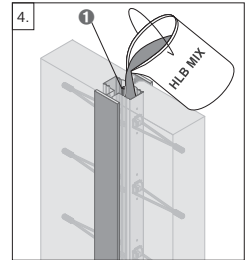
1. Precast concrete element with closed HLB Loop Box.



2. Remove the HLB Loop Box cover: loosen the cover from the concrete as shown. Strike in the pre-punched hole and pull out the steel cover. Remove end covers (adhesive tape). If HLB Spacers are used, they must be removed, using an appropriate tool (e.g. a carpenter's hammer).



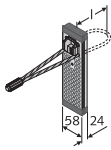
3. Setting up the precast element. All wire loops must protrude perpendicularly to the joint, and after deflection during the setting up they should spring back into this position.



4. Insert the reinforcement bar diam. 12 mm and encase the joint with an appropriate formwork. Prepare the HLB MIX joint grout according to the manufacturer's instructions. The maximum grouting height is 3,5 m, or use a hose. HLB MIX joint grout is free flowing, no additional compaction is required.

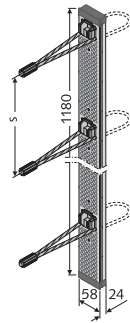
Kennzeichnung

Single Loop Box

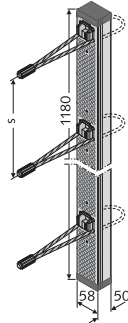


HLB S

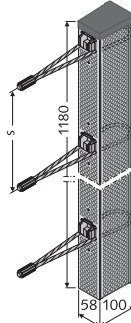
Multi Loop Box



HLB M 20

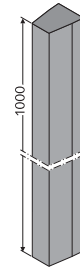


HLB M 50



HLB M 100

HLB Spacer

HLB Spacer 20
HLB Spacer 50
HLB Spacer 100HLB MIX
Vergussmörtel

(Siehe gesonderte Gebrauchsanleitung HLB MIX.)

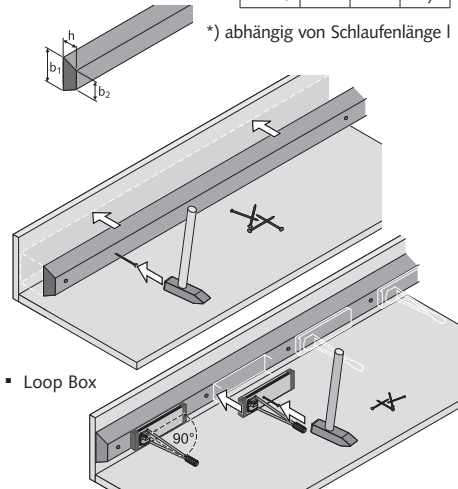
Befestigung an der Schalung

Single Loop Box

- Trapezleiste (bauseits)

[mm]	b ₁	b ₂	h
HLB S	>55	55	*)

*) abhängig von Schlaufenlänge l



- Loop Box

Befestigung an Holzschalung:

- Nageln
- Kleben (Klebeband, Heißkleber)

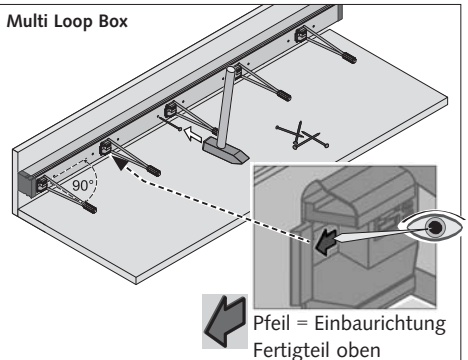
Befestigung an Stahlschalung:

- Kleben (Klebeband, Heißkleber)
- Magnethalter

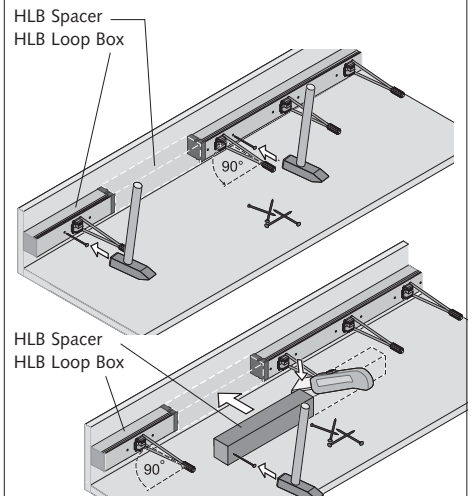
Zuschneiden der HLB Spacer:

Erforderliche Länge ausmessen und HLB Spacer mit einem handelsüblichen Cutter oder scharfen Messer auf Maß abtrennen.

Multi Loop Box



Multi Loop Box + Spacer



Ausrichtung, Einbau der Zulagebewehrung

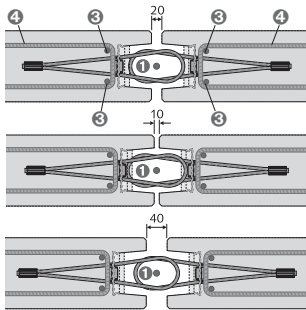
Einbautoleranzen gemäß bauaufsichtlichen Zulassungen, empfohlen auch für Anwendung als konstruktive Verbindung.

Horizontal:

Fugenbreite:
Regelfall: 20 mm

Minimum: 10 mm

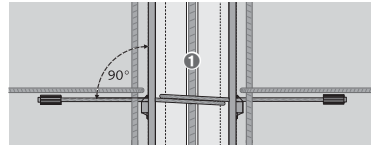
Maximum: 40 mm



Vertikal:

Ausrichtung der Loop Boxen:

Regelfall: Schlaufen auf gleicher Höhe axial ausgerichtet

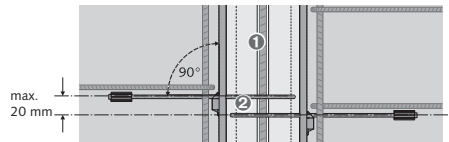


Einbau der Zulagebewehrung:

Die Zulagebewehrung ist gemäß Bewehrungsplan einzubauen und an der Bauteilbewehrung zu fixieren.

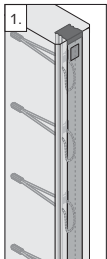
- 1 Stab B500A, Ø 12 mm
- 2 Eine Höhentoleranz von maximal 20 mm ist zulässig.
Ein Verrödeln der Schlaufen ist nicht zwingend erforderlich.
- 3 Stab B500A, Ø 10 mm
- 4 Bügel B500A, Ø 8 mm, Verankerung nach DIN 1045-1

Vertikale Toleranz: maximal: 20 mm

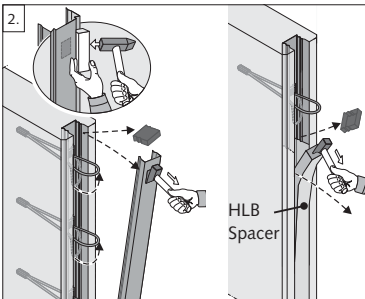


Schweißen ist an HLB Elementen nicht zulässig!

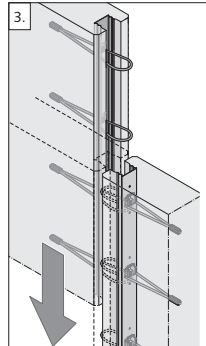
Auf der Baustelle



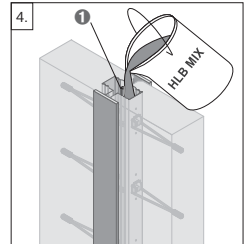
1. Zustand mit geschlossener HLB Loop Box



2. HLB Loop Box Deckel entfernen: Deckel vom Beton lockern wie dargestellt. Vorgestanztes Loch mit Hammer einschlagen, Deckel herausziehen; Endverschlüsse (Klebband) vollständig entfernen. Die Seilschlaufen klappen selbsttätig aus. Wenn HLB Spacer eingesetzt wurden, sind diese ebenfalls mit einem geeigneten Werkzeug, z.B. Lattenhammer zu entfernen.



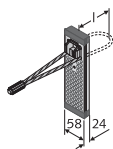
3. Fertigteil aufstellen. Alle Seilschlaufen sollen senkrecht abstehen und auch nach Ablenkung beim Aufstellen des Fertigteils wieder in diese Position federn.



4. Bewehrungsstab Ø 12 mm einfügen und Fuge einschalen. HLB MIX Vergussmörtel nach Vorschrift ansetzen und gleichmäßig einfüllen. Maximale Vergusshöhe = 3,5 m, oder Vergusschlauch verwenden. HLB MIX Vergussmörtel ist fließfähig, es ist keine zusätzliche Verdichtung erforderlich.

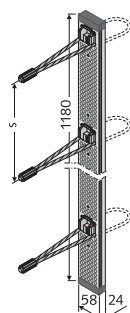
La gamme

Boîtier mono boucle

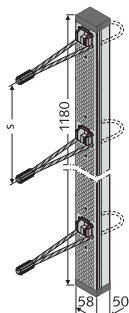


HLB S

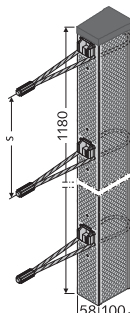
Boîtier multi boucles



HLB M 20

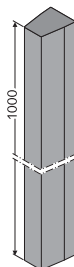


HLB M 50



HLB M 100

Prolongateur HLB

HLB Spacer 20
HLB Spacer 50
HLB Spacer 100HLB MIX
Mortier de clouetage

(Voir la notice d'utilisation du mortier HLB MIX.)

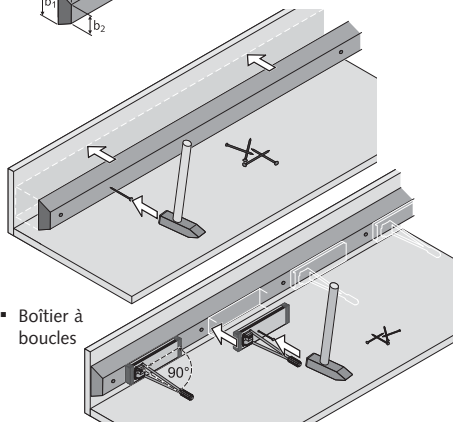
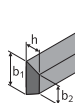
Fixation au coffrage

Boîtier mono boucle

- Gabarit de clouetage (hors fourniture HALFEN)

[mm]	b ₁	b ₂	h
HLB S	>55	55	*)

*) Selon la longueur de la boucle l



- Boîtier à boucles

Fixation sur coffrage en bois :

- Par clouetage
- Par collage (adhésif ou colle)

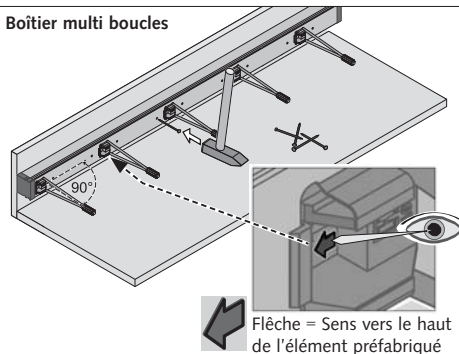
Fixation sur coffrage en acier :

- Par collage (adhésif ou colle)
- Par fixation magnétique

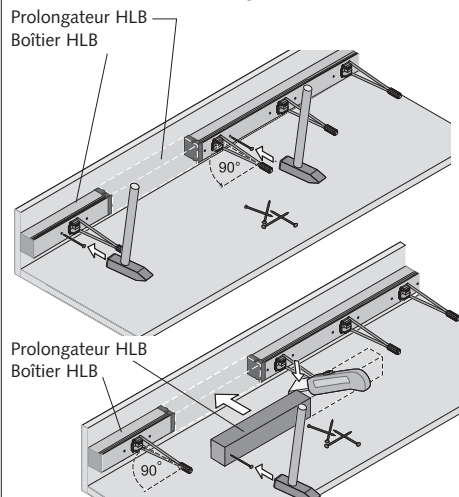
Mise à longueur des prolongateurs :

Mesurer la longueur désirée et couper le prolongateur HLB avec un cutter ou un simple couteau.

Boîtier multi boucles



Boîtier multi boucles + Prolongateur

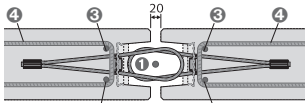


Ajustement et mise en place des aciers supplémentaires

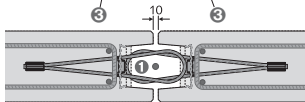
Tolérances de construction Suivant l'agrément officiel, ils peuvent être utilisés également pour des liaisons constructives.

Coupe horizontale :

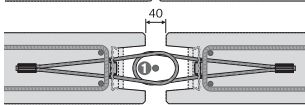
Largeur du joint :
Normal : 20 mm



Minimum: 10 mm



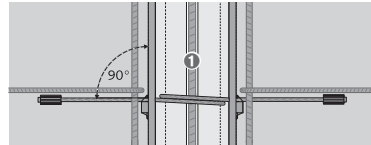
Maximum: 40 mm



Coupe verticale :

Alignement des boîtiers :

Cas normal : boucles alignées dans l'axe et au même niveau.

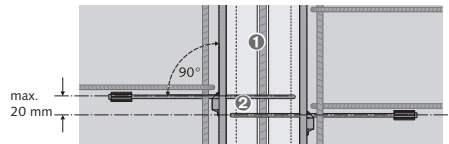


Mise en place des armatures supplémentaires:

Les armatures supplémentaires doivent être mises en place conformément aux schémas et elles doivent être fixées aux armatures structurelles

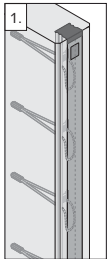
- ① Barre en acier B500A, Ø 12 mm
- ② Une tolérance verticale de 20 mm maximum est autorisée. Les boucles n'ont pas besoin d'être ligaturées.
- ③ Barre en acier B500A, Ø 10 mm
- ④ Etrier en acier B500A, Ø 8 mm, ancrages selon la DIN 1045-1

Tolérance verticale : maximum 20 mm

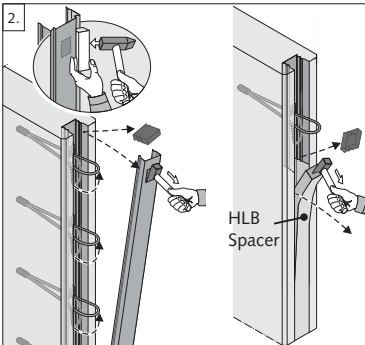


La soudure sur les éléments HLB n'est pas autorisée !

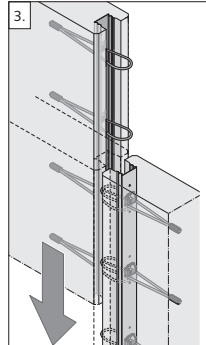
Sur le chantier



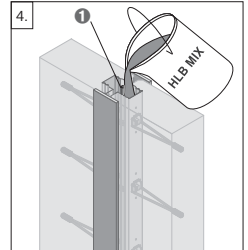
1. Élément préfabriqué avec un boîtier à boucle HLB.



2. Retirer le couvercle du boîtier HLB : extraire le couvercle du béton comme montré dans le schéma. Enfoncé le trou pré-percé dans le couvercle en acier. Enlever les scotchs aux extrémités. Si des prolongateurs HLB sont incorporés, ils doivent être retirés à l'aide d'un outil approprié (comme un marteau de charpentier) et entièrement extraits.



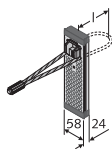
3. Installation de l'élément préfabriqué adjacent. Toutes les boucles doivent être relevées perpendiculairement au joint, après avoir été pliée lors de la mise en place de l'élément préfabriqué, elles doivent se relever automatiquement.



4. Insérer un acier d'armature de Ø 12 mm et coffrer le joint avec les matériaux appropriés. Préparer le mortier de joint HLB MIX en suivant les préconisations du fabricant. La hauteur maximale de coulage est de 3,5 m, sinon utilisez un tuyau. Le mortier HLB MIX est fluide et n'a pas besoin d'être vibré.

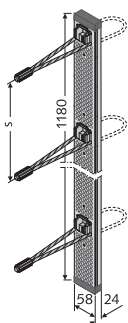
Oznakowanie

Element jedнопętłowy

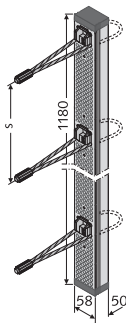


HLB S

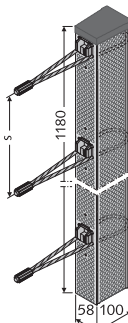
Element wielopętłowy



HLB M 20

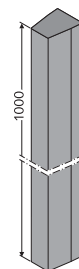


HLB M 50



HLB M 100

Wkładka HLB

HLB Spacer 20
HLB Spacer 50
HLB Spacer 100HLB MIX
Zaprawa
zalewowa(patrz instrukcja
przygotowania
HLB MIX.)

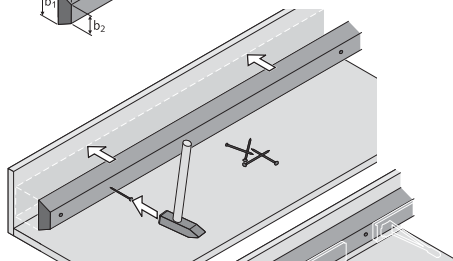
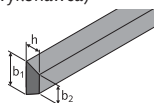
Przymocowanie do deskowania

Element jedнопętłowy

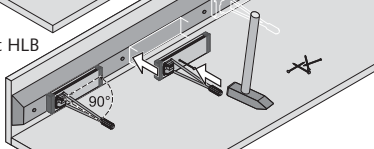
- Listwa trapezowa
(wykonawca)

[mm]	b ₁	b ₂	h
HLB S	>55	55	*)

*) W zależności od dł. pętli l



- Element HLB



Deskowanie drewniane:

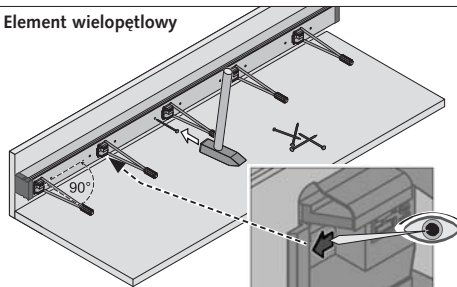
- Przybicie gwoździami
- Klejenie (taśma, klej na gorąco)

Deskowanie stalowe:

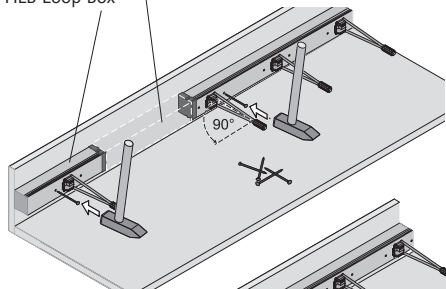
- Klejenie (taśma, klej na gorąco)
- Magnetyczne elementy mocujące

Przycinanie elementów pośrednich z tworzywa sztucznego:
zmierzyć wymaganą długość wkładki i dociąć na wymiar.

Element wielopętłowy

Strzałka = kierunek
montażu, góra prefabrykatu

Element wielopętłowy + wkładka

HLB wkładka
HLB Loop BoxHLB wkładka
HLB Loop Box

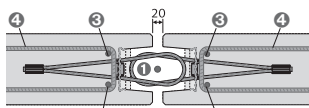
Ustawianie prefabrykatów, montaż dodatkowego zbrojenia

Tolerancja wbudowania wg Aprobaty Technicznej, zalecane także do zastosowań jako połączenia konstrukcyjne.

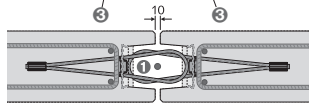
w poziomie:

Szer. spoiny:

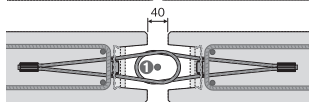
Typowa: 20 mm



Minimum: 10 mm



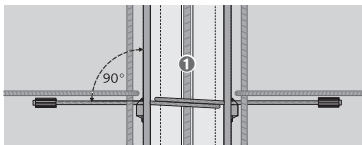
Maximum: 40 mm



w pionie:

Ustawienie elementów HLB:

Typowe: Ustawienie pętli w jednej płaszczyźnie

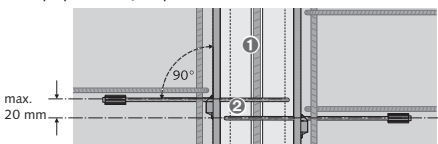


Montaż dodatkowego zbrojenia:

Dodatkowe zbrojenie należy wbudować zgodnie z projektem i przymocować do zbrojenia elementów.

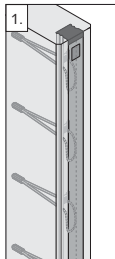
- 1 Pręt B500A, Ø 12 mm
- 2 Dopuszczalne przesunięcie pionowe max. 20 mm, Wiązanie pętli parami nie jest wymagane
- 3 Pręt B500A, Ø 10 mm
- 4 Strzemień B500A, Ø 8 mm, zakotwienie wg EC2

Dop. przesunięcie pionowe: maximum 20 mm

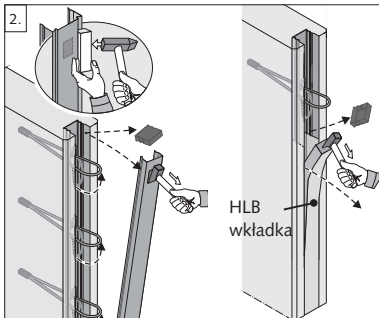


Spawanie elementów HLB jest niedopuszczalne!

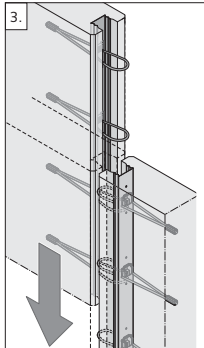
Na budowie



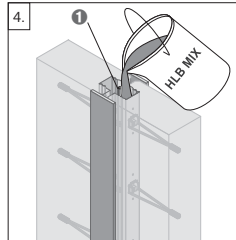
1. Prefabrykat z zamkniętym elementem HLB.



2. Usunięcie pokrywy HLB: odspoić pokrywę od betonu zgodnie z rysunkiem. Wybić oznaczony otwór młotkiem. Wyciągnąć pokrywę. Usunąć zamknięcia końcowe z taśmy klejącej. Pętle linowe wyproszą się samoczynnie. Jeśli wbudowane były wkładki, należy je usunąć przy pomocy odpowiednich narzędzi np. młotka ciesielskiego.



3. Ustawienie prefabrykatu. Wszystkie pętle linowe po ustawieniu prefabrykatu powinny być usytuowane prostopadle do płaszczyzny połączenia.



4. Wstawienie pręta i szalowanie połączenia. Przygotować zaprawę HLB MIX wg instrukcji i równomiernie wypełnić połączenie. Maksymalna wysokość betonowania 3,5 m, w razie potrzeby stosować rękaw. Zaprawa HLB MIX jest konsystencji płynnej i nie wymaga dodatkowego zagęszczenia.

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