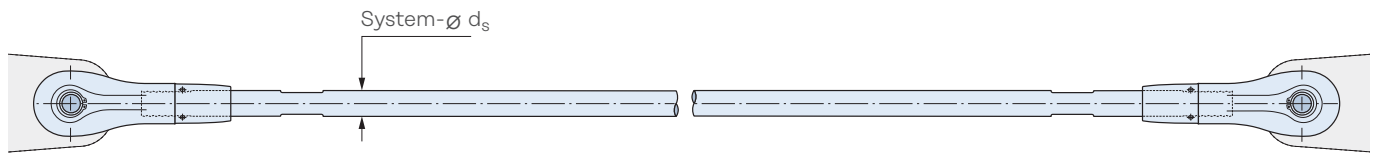


## Halfen Detan Tension rod system

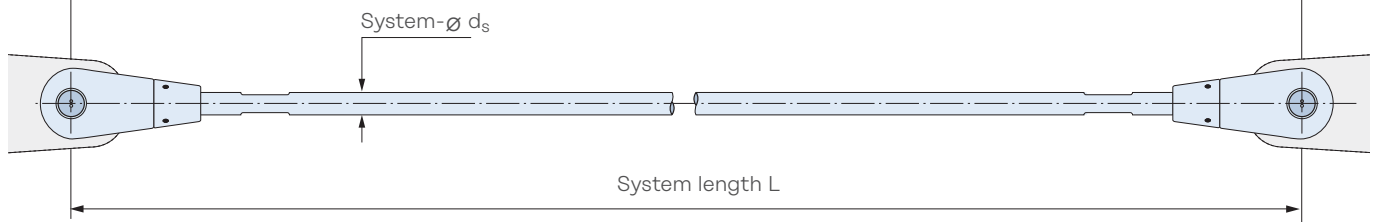
### Basic system without couplers

Customer: \_\_\_\_\_ Contact name: \_\_\_\_\_  
 Customer address: \_\_\_\_\_  
 Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Project: \_\_\_\_\_ Project address: \_\_\_\_\_  
 Date: \_\_\_\_\_ Customer no.: \_\_\_\_\_ Enquiry  Estimate  Order

#### Tension rod system Halfen Detan-S (steel):



#### Tension rod system Halfen Detan-D (stainless):



Choice of material: **Halfen Detan-S (steel)** – FV (hot-dip galvanized) ETA-05/0207; EN1993      **Halfen Detan-S (steel)** – WB (mill finish) ETA-05/0207; EN1993      **Halfen Detan-D (stainless)** ETA-23/0276

Item.	Qty	d <sub>s</sub> [mm]	Z <sub>Ed,max</sub> ① [kN]	System length L [mm]	Material choice		
					mill finish	hot-dip galvanized	stainless
Example	3	30		5600		x	

① maximum tension load required if diameter is unknown

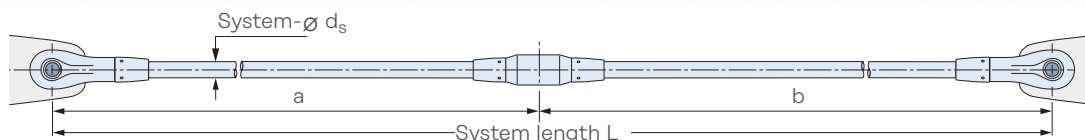
# Halfen Detan Tension rod system

## Basic system with couplers

Customer: \_\_\_\_\_ Contact name: \_\_\_\_\_  
 Customer address: \_\_\_\_\_  
 Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Project: \_\_\_\_\_ Project address: \_\_\_\_\_  
 Date: \_\_\_\_\_ Customer no.: \_\_\_\_\_ Enquiry  Estimate  Order

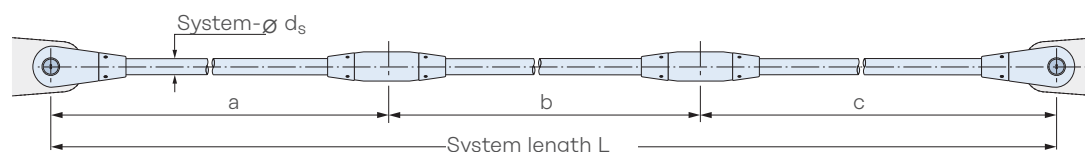
### One coupler:

Example  
Halfen Detan-S (steel)



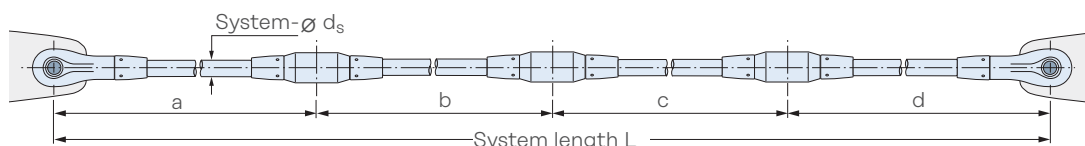
### Two couplers:

Example  
Halfen Detan-D (stainless)



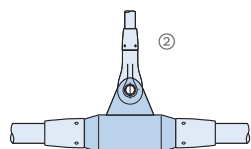
### Three couplers:

Example  
Halfen Detan-S (stainless)



**Coupler (MO)**

Example Halfen Detan-D (stainless)



**Coupler with hanger (MS)**

Example Halfen Detan-S (steel)

**i** If more than three couplers are required, informative drawings showing the couplers locations shall be submitted. Couplers with or without hanger are available for both systems Halfen Detan-S and Halfen Detan-D.

Choice of material: **Halfen Detan-S (steel)** – FV (hot-dip galvanized) ETA-05/0207; EN1993      **Halfen Detan-S (steel)** – WB (mill finish) ETA-05/0207; EN1993      **Halfen Detan-D (stainless)** ETA-23/0276

Item.	Qty	d <sub>s</sub> [mm]	Z <sub>Ed,max</sub> <sup>①</sup> [kN]	System length L [mm]	Qty of couplers [max.3]	Length a [mm]	MO or MS	Length b [mm]	MO or MS	Length c [mm]	MO or MS	Length d [mm]	Material choice			
													mill finish	hot-dip galvanized	stainless	
Example	3	30		5600	1									X		

① maximum tension load required if diameter is unknown

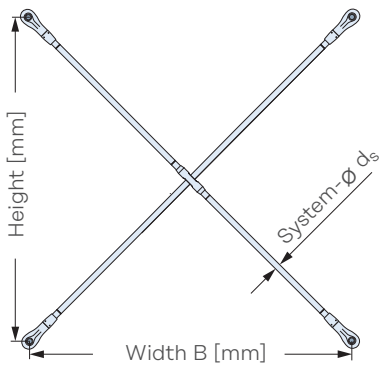
② suspended systems at couplers with hanger can be recorded in our order form: basic system without couplers

## Halfen Detan Cross bracings

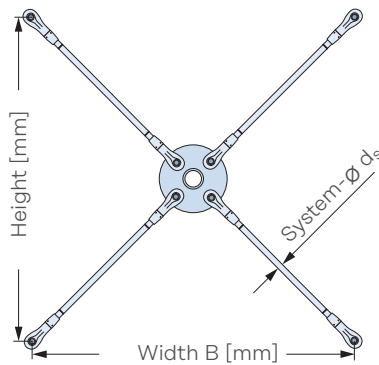
Double - symmetric fields (rectangular or square)

Customer: \_\_\_\_\_ Contact name: \_\_\_\_\_  
 Customer address: \_\_\_\_\_  
 Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Project: \_\_\_\_\_ Project address: \_\_\_\_\_  
 Date: \_\_\_\_\_ Customer no.: \_\_\_\_\_ Enquiry  Estimate  Order

### Cross bracing



with cross couplere ②



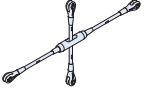
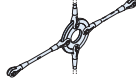
with anchor disc ②

Choice of material:

**Halfen Detan-S (steel) –**  
 FV (hot-dip galvanized)  
 ETA-05/0207; EN1993

**Halfen Detan-S (steel) – WB (mill finish)**  
 ETA-05/0207; EN1993

**Halfen Detan-D (stainless)**  
 ETA-23/0276

Item	Qty	d <sub>s</sub> [mm]	Z <sub>Ed,ma</sub> <sup>①</sup> [kN]	B [mm]	H [mm]			Material choice		
								mill finish	hot-dip galva- nized	stain- less
Example	3	30		5600	4200	x		x		

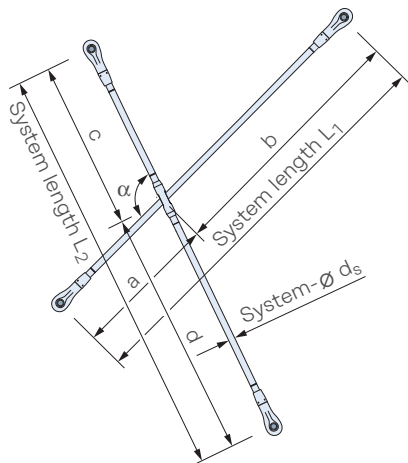
① maximum tension load required if diameter is unknown  
 ② smallest installation angle  $\alpha = 40^\circ$

# Halfen Detan Cross bracings

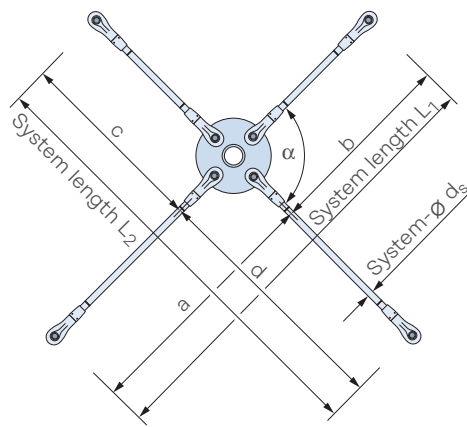
Asymmetric fields (e.g. trapezoidal or diamond-shaped)

Customer: \_\_\_\_\_ Contact name: \_\_\_\_\_  
 Customer address: \_\_\_\_\_  
 Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Project: \_\_\_\_\_ Project address: \_\_\_\_\_  
 Date: \_\_\_\_\_ Customer no.: \_\_\_\_\_ Enquiry  Estimate  Order

### Cross bracing



with cross coupler ②



with anchor disc ②

Choice of material:

**Halfen Detan-S (steel) – FV** (hot-dip galvanized)  
ETA-05/0207; EN1993

**Halfen Detan-S (steel) – WB** (mill finish)  
ETA-05/0207; EN1993

**Halfen Detan-D (stainless)**  
ETA-23/0276

Item	Qty	ds [mm]	Z <sub>Ed,max</sub> <sup>①</sup> [kN]	System length L1 [mm]	System length L2 [mm]	Length a [mm]	Length b [mm]	Length c [mm]	Length d [mm]	Opening angle ② [°]	Material choice		
											mill finish	hot-dip galvanized	stainless
Example	3	30		5600	4200	x						x	
Plausibility check: L <sub>1</sub> = a + b and L <sub>2</sub> = c + d													

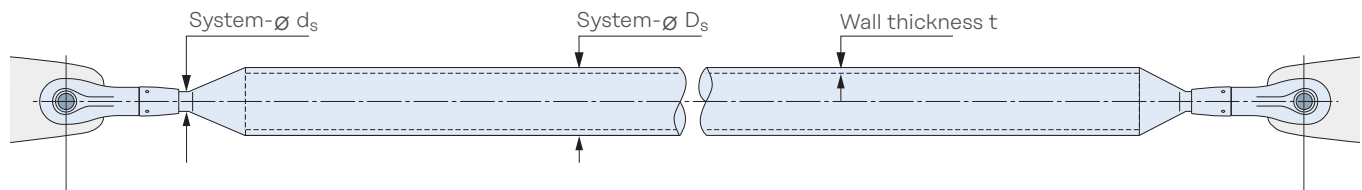
① maximum tension load required if diameter is unknown

② smallest installation angle α = 40°

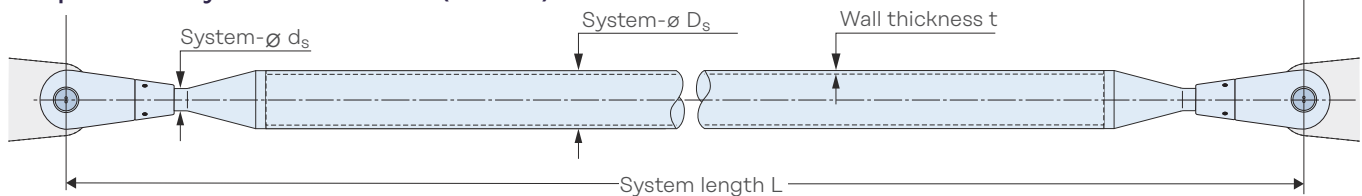
# Halfen Detan Compression rod system

Customer: \_\_\_\_\_ Contact name: \_\_\_\_\_  
 Customer address: \_\_\_\_\_  
 Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Project: \_\_\_\_\_ Project address: \_\_\_\_\_  
 Date: \_\_\_\_\_ Customer no.: \_\_\_\_\_ Enquiry  Estimate  Order

## Compression rod system Halfen Detan-S (steel):



## Compression rod system Halfen Detan-D (stainless):



Choice of material: **Halfen Detan-S (steel)** – FV (hot-dip galvanized) ETA-05/0207; EN1993      **Halfen Detan-S (steel)** – WB (mill finish) ETA-05/0207; EN1993      **Halfen Detan-D (stainless)** ETA-23/0276

Item	Qty	d <sub>s</sub> [mm]	D <sub>s</sub> ③ [mm]	t ③ [mm]	N <sub>Ed,max</sub> ① [kN]	Z <sub>Ed,max</sub> ② [kN]	System length L [mm]	Material choice		
								mill finish	hot-dip galvanized	stainless
Example	5	16	54	2.6			1250		x	

- ① for unknown geometry maximum compression stress is required
- ② for unknown geometry maximum tension stress is required (only if present)
- ③ shorter delivery periods if standard lengths from table below will be selected (see ③ note):

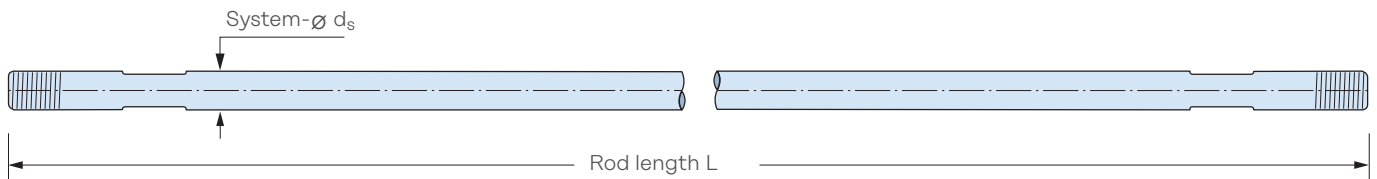
**Note:** Halfen Detan Compression rods are also available with other diameters as shown in the table.

Standard cross sections [mm]; only for steel S355								
System-ø D <sub>s</sub>	42	54	60	76	89	114	139	
Wall thickness	2.6	2.6	2.9	2.9	3.2	3.6	4.0	

# Halfen Detan Tension rod special design

Customer: \_\_\_\_\_ Contact name: \_\_\_\_\_  
 Customer address: \_\_\_\_\_  
 Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Project: \_\_\_\_\_ Project address: \_\_\_\_\_  
 Date: \_\_\_\_\_ Customer no.: \_\_\_\_\_ Enquiry  Estimate  Order

**Special design rod ③**



Choice of material: **Halfen Detan-S (steel) – FV (hot-dip galvanized) ETA-05/0207; EN1993**      **Halfen Detan-S (steel) – WB (mill finish) ETA-05/0207; EN1993**      **Halfen Detan-D (stainless) ETA-23/0276**

Item	Qty	d <sub>s</sub> ③ [mm]	System length L [mm]	Thread design incl. indication ①② of thread-length [mm]			Fork connection single ended with thread direction ③		Material choice		
				r/r	l/l	r/l	r	l	mill finish	hot-dip galvanized	stainless
Example	3	30	2500		x			x		x	
					125	80					

① r/r = right-hand/right-hand - thread; l/l = left-hand/left-hand - thread; r/l = right-hand/left-hand - thread  
 ② thread lengths up to 195 mm possible  
 ③ not part of European Technical Assessment