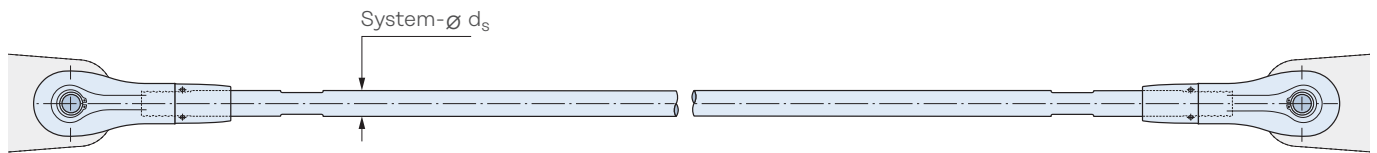


Halfen Detan Tension rod system

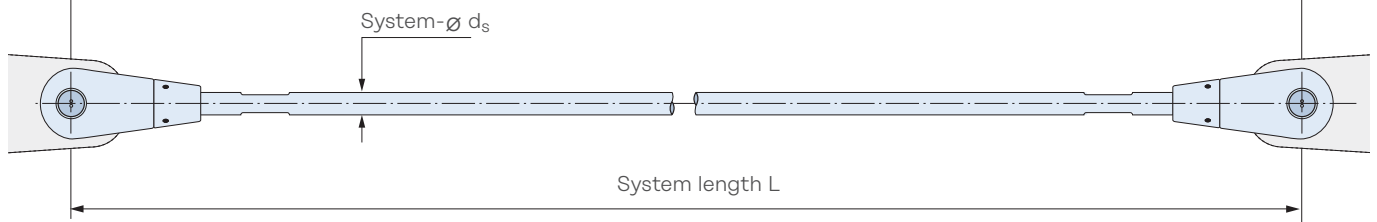
Basic system without couplers

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 _s [mm]	Z _{Ed,max} 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

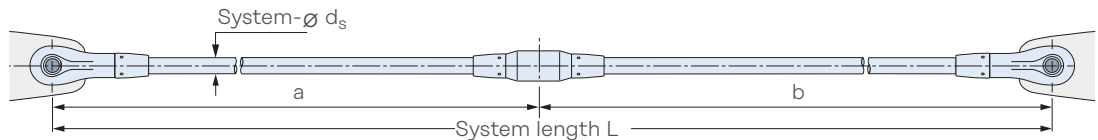
Halfen Detan Tension rod system

Basic system with couplers

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

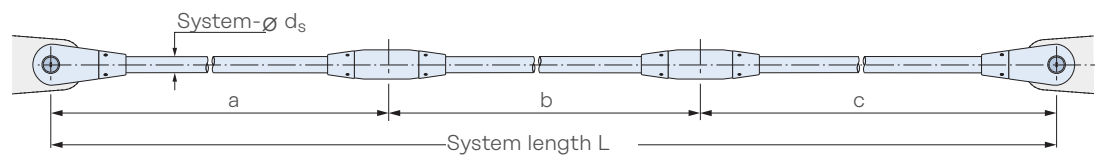
One coupler:

Example
Halfen Detan-S (steel)



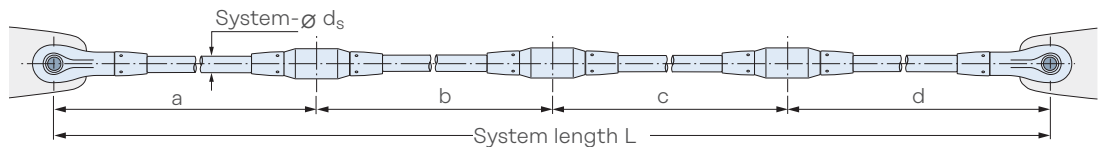
Two couplers:

Example
Halfen Detan-D (stainless)



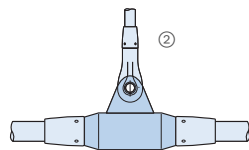
Three couplers:

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_s [mm]	$Z_{Ed,max}$ ① [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										x	

① maximum tension load required if diameter is unknown

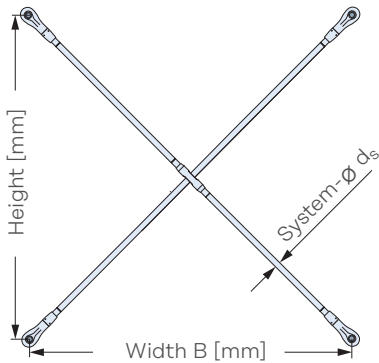
② suspended systems at couplers with hanger can be recorded in our order form: basic system without couplers

Halfen Detan Cross bracings

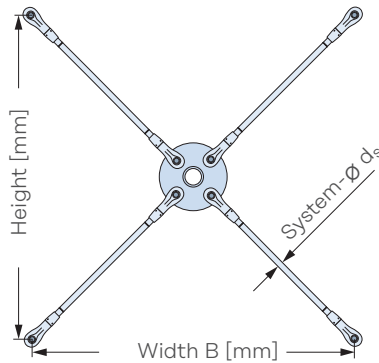
Double - symmetric fields (rectangular or square)

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

Cross bracing



with cross couplere ②



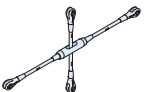
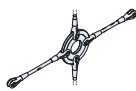
with anchor disc ②

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 _s [mm]	Z _{Ed,ma} ^① [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

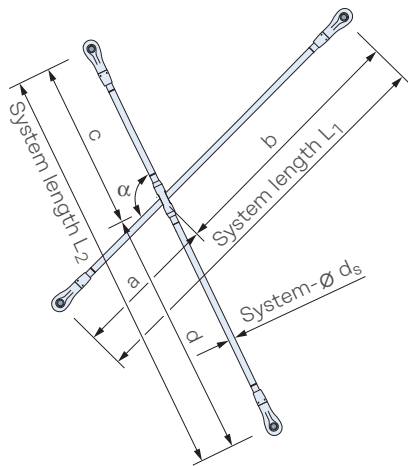
② smallest installation angle α = 40°

Halfen Detan Cross bracings

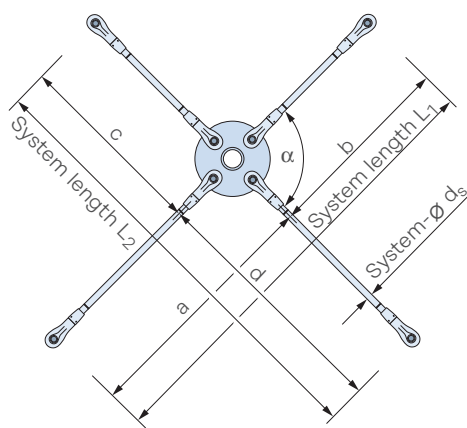
Asymmetric fields (e.g. trapezoidal or diamond-shaped)

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	d _s [mm]	Z _{Ed,max} ^① [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 galva- nized	stain- less
Example	3	30		5600	4200	x						x	
Plausibility check: L ₁ = a + b and L ₂ = c + d													

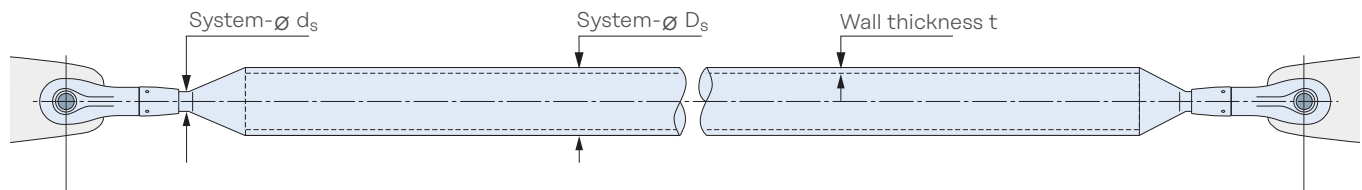
① maximum tension load required if diameter is unknown

② smallest installation angle α = 40°

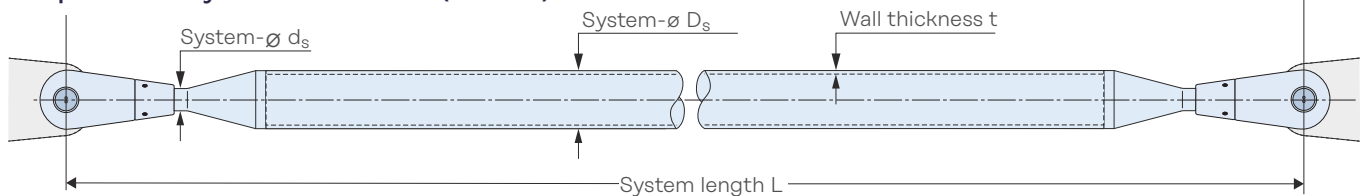
Halfen Detan Compression rod system

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 _s [mm]	D _s ③ [mm]	t ③ [mm]	N _{Ed,max} ① [kN]	Z _{Ed,max} 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):

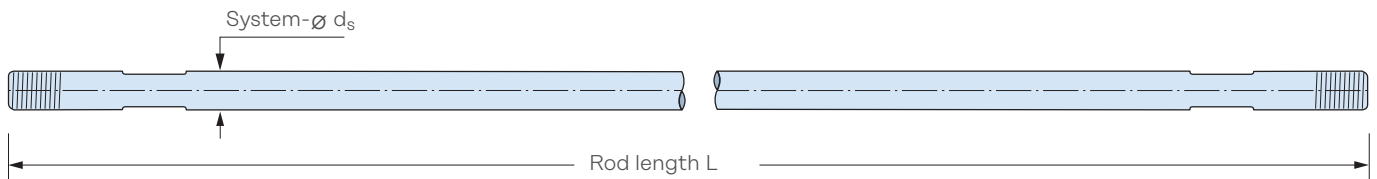
i **Note:** Halfen Detan Compression rods are also available with other diameters as shown in the table.

Standard cross sections [mm]; only for steel S355							
System-ø D _s	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 _s 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