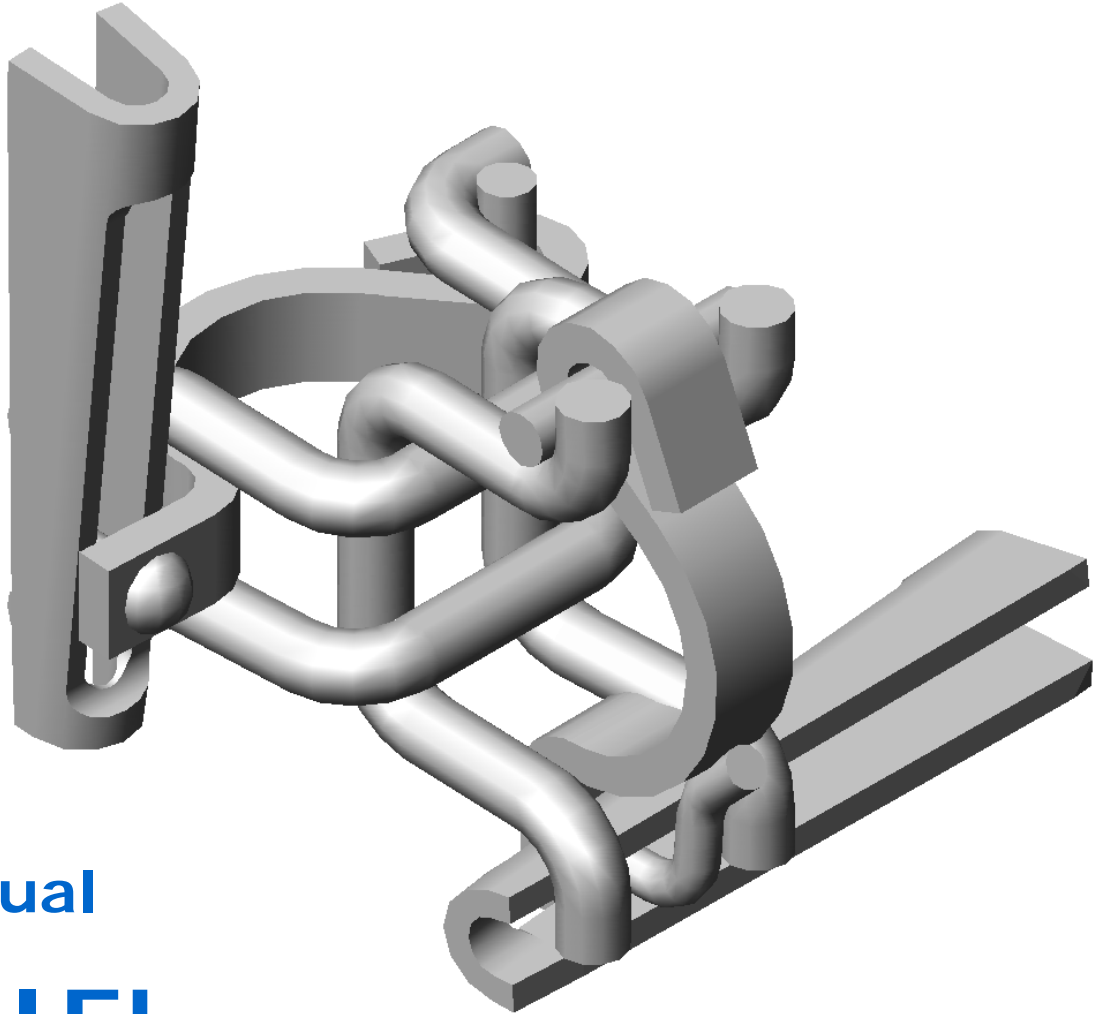




van Thiel United bv
s c a f f o l d e q u i p m e n t



Manual

THIEL

Scaffold Coupler

Right-angle Couplers
Swivel Couplers
Sleeve Couplers + joint pin
Beam Clamps

Wedge couplers are used for a temporary connection of two tubes:

- Right angle coupler: connecting two tubes in a right angle
- Swivel coupler: connecting two tubes in any angle
- Sleeve coupler: connecting two tubes in an end-to-end connection
- Beam clamp: connecting a tube on a steel beam

The connection is obtained by tightening the flaps of the coupler on the tube and hammering the wedge with a 500 gram hammer.

Standards

Van Thiel couplers are fully tested and in compliance with the European NEN-EN 74-1 standard in the following classes:

- Class B for right angle couplers, certified for use as class BB coupler
- Class B for swivel couplers
- Class B for sleeve couplers
- Values for beam clamps are obtained by testing.

Material

The base materials of the couplers follow the European standard and/or values stated in EN 12811-2. All base materials are tested at the van Thiel factory according to our ISO 9000-2000 system.

Identification

Van Thiel couplers are recognizable by a marking in the flap of the coupler or in the fixed wedge. Marking text:  EN74 B CU

Quality

The van Thiel quality department checks the quality of the couplers by means of ongoing process checks and daily tests of the couplers.

Corrosion protection

The couplers are hot dip galvanized and have therefore a lifetime corrosion protection.

The corrosion protection is according to the following standards:

- Galvanising: EN-ISO 1461:2009.
- Sheradising: EN 13811:2003 and EN-ISO 14713-1 and -3:2010

Use

Use couplers only for connecting:

- Two steel scaffolding tubes with a outside diameter of 48,3 mm according to EN-39 or equivalent.
- Two aluminium scaffolding tubes with a diameter of 48,3 mm and minimum wall thickness of 4 mm.

Wedge couplers shall be tightened with a 500 grams hammer to the **jarring blow**. This means two or three blows with a hammer of 500 grams using normal power.

We recommend hand and eye protection using wedge couplers.

Each coupler should be visually checked before using it. If any coupler is visually damaged or deformed, disqualify the coupler and don't use it anymore.

THIEL right angle coupler



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THIEL swivel coupler



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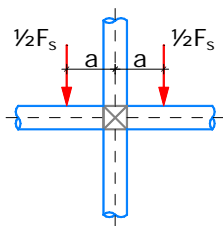


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Right-angle coupler	
	EN 74-1 class B
Product number:	P-1057
Weight:	1,5 kg
Practical value:	9,1 kN
Safety factor:	1,65
Product code in wedge:	• EN74 B CU
Right-angle coupler:	Connecting two tubes at a right angle
EN 74:	Testing according EN 74-1:2005
B:	Classification according to EN 74-1:2005
CÜ:	Control of production by means of an independent certification institute
Corrosion protection:	Galvanizing

Slipping force

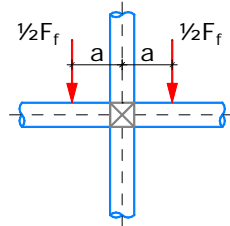


$$F_{s,c} = 15 \text{ kN} \text{ *)}$$

$$F_{s,c,\gamma} = 9,1 \text{ kN} \text{ } (\gamma=1,65)$$

$$1 \leq \Delta 2 \leq 2 \text{ mm}$$

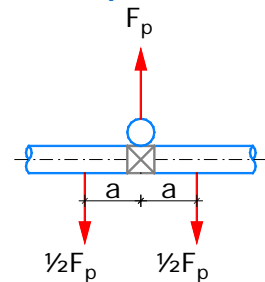
Failure force



$$F_{f,c} = 30 \text{ kN} \text{ *)}$$

$$F_{f,c,\gamma} = 18,2 \text{ kN} \text{ } (\gamma = 1,65)$$

Pull apart



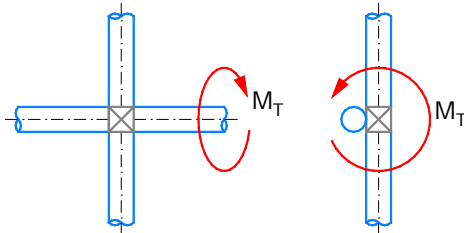
$$F_p = 30 \text{ kN}$$

$$F_{p,\gamma} = 18,2 \text{ kN} \text{ } (\gamma = 1,65)$$

Loaded coupler is supported when tested for failure.

*) Also certified for use as a class BB coupler: $F_{s,c} = 25 \text{ kN}$, $F_{f,c} = 45 \text{ kN}$.

Cruciform bending stiffness

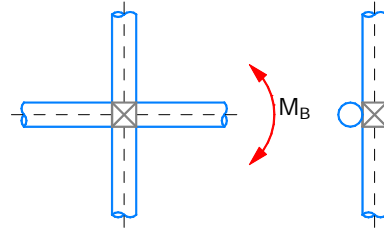


Steel tube:

$$MB = 0,48 \text{ kNm} \quad \gamma = 1,65 \quad c1 = 15 \text{ kNm/rad}$$

$$MB = 0,80 \text{ kNm} \quad \gamma = 1,00 \quad c2 = 6,0 \text{ kNm/rad}$$

Moment of rotation



$$MT1 = 100 \text{ Nm} \quad \phi = +/- 1^\circ$$

$$MT2 = 130 \text{ Nm} \quad \phi = +/- 2^\circ$$

Aluminium tube:

$$MB = 0,48 \text{ kNm} \quad \gamma = 1,65 \quad c1 = 13 \text{ kNm/rad}$$

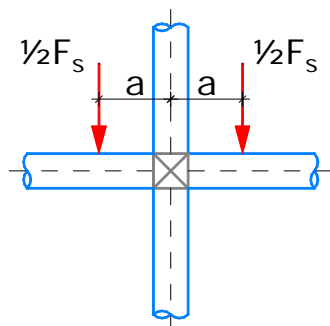
$$MB = 0,80 \text{ kNm} \quad \gamma = 1,00 \quad c2 = 5 \text{ kNm/rad}$$

Note: When using couplers according to EN 12811 specific interaction formulas for coupler checks are available.



Swivel coupler	
	EN 74-1 class B
Product number:	P-1126
Weight:	1,7 kg
Practical value:	9,1 kN
Safety factor:	1,65
Product code in wedge:	• EN74 B CU
Swivel coupler:	Connecting two tubes at an angle
EN 74:	Testing according to NEN-EN 74-1:2005
B:	Classification according to EN 74-1:2005
CÜ:	Control of production by means of an independent certification institute
Corrosion protection:	Galvanizing

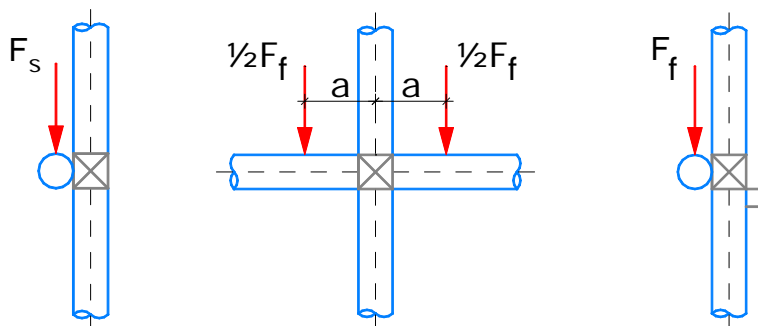
Slipping force



$$F_s = 15 \text{ kN}$$

$$F_{s,\gamma} = 9,1 \text{ kN} \quad (\gamma=1,65) \quad 1 \leq \Delta 2 \leq 2 \text{ mm}$$

Failure force



$$F_f = 20 \text{ kN}$$

$$F_{f,\gamma} = 12,1 \text{ kN} \quad (\gamma = 1,65)$$

Loaded coupler is supported when tested for failure.

Note: When using couplers according to EN 12811 specific interaction formulas for coupler checks are available.



Sleeve coupler with joint pin	
	EN 74-1 class B
Product number:	P-1125 + P-1140
Weight:	1,7 kg
Practical value:	5,45 kN (pull apart) 0,85 kNm (moment)
Safety factor:	1,65
Product code in wedge:	• EN74 B CU
Sleeve coupler & joint pin:	Connecting two tubes in axial direction
EN 74:	Testing according EN 74-1:2005
B:	Classification according to EN 74-1:2005
CÜ:	Control of production by means of an independent certification institute
Corrosion protection:	Galvanizing

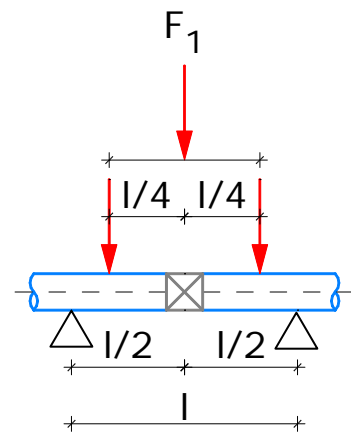
Slipping force



$$F_{s,c} = 9 \text{ kN}$$

$$F_{s,c,\gamma} = 5,45 \text{ kN} \quad (\gamma = 1,65)$$

Moment



$$M_{agv F_1} = 1,4 \text{ kNm}$$

$$M_{agv F_1,\gamma} = 0,85 \text{ kNm} \quad (\gamma = 1,65)$$

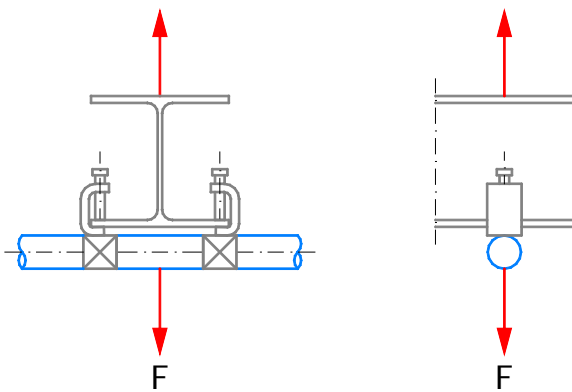
Always use sleeve coupler with joint pin

Note: When using couplers according to EN 12811 specific interaction formulas for coupler checks are available.



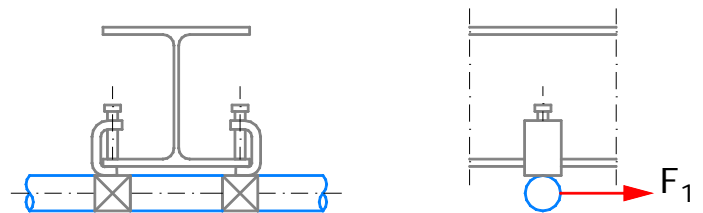
Beam clamp	Type wedge
Product number:	P-1069
Weight:	1,3 kg
Practical value:	36 kN (use in pairs)
Safety factor:	1,65
Product code in wedge:	• HOLLAND
Beamclamp:	Connecting tubes on steel beams (I beam)
Corrosion protection:	Sheradising

Pull apart



$F = 60 \text{ kN}$ per pair of couplers
 $F_{\gamma} = 36,0 \text{ kN}$ ($\gamma = 1,65$)

Slipping force



$F_1 = 10 \text{ kN}$
 $F_{1\gamma} = 6,0 \text{ kN}$

Always use in pairs.