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Austenitic stainless steel	DT-S	► 4.6
Carbon steel	TI	► 4.11
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Carbon steel Plastic sleeve	TIA-T25 R45	► 4.25

isoweld™	Product code	Page
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SPIKE® twister: Faster, easier fixing into concrete

Fixing into concrete with conventional methods is at best complicated. Using plug free fasteners however considerably improves installation time. The SPIKE® system has been

developed and optimised by SFS intec over recent years and has a proven track record with respect to its fast installation, security of application and ease of use.

The SPIKE® twister is part of the *isofast*®, *isotak*® and *isoweld*™ system.

The convincing advantages of the SPIKE® twister fastening systems



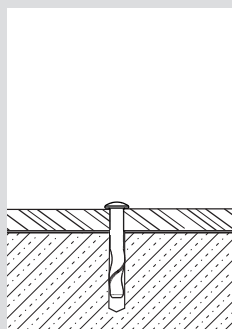
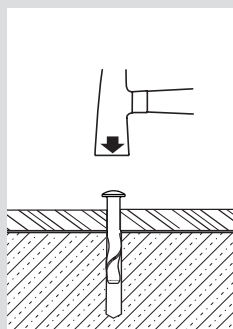
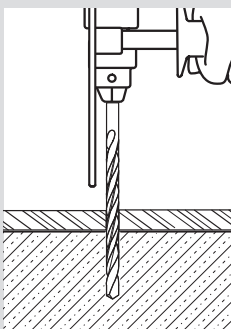
- Tough anchoring due to all round force distribution
- Simple one-piece fastener
- No need to fit and adjust plugs
- Reduced diameter pilot holes required
- Reduced drilling depth
- Maximum corrosion resistance
- Available in austenitic stainless steel
- Highly fire resistant
- Absolutely free from vibration
- Simple procedure: pre-drill and drive in, secure and stable



Plug-free fixing directly into concrete

Fixing into concrete using the SPIKE® system is even more secure and efficient. The unique spiral tip of the SPIKE® twister fastener exerts all round pressure within the pilot hole. The continuous pre-tensioning due to the rotary force transmission results in a considerably improved pull-out performance.

Installation is so simple: Drill, hammer home – job done



High pull-out resistance from concrete and similar aggregate materials

The SPIKE® twister is vibration free, corrosion proof and offers extremely high fire resistance. The entire range is available in austenitic stainless steel, making this fastener ideal for critical applications including those with chemically aggressive atmospheric conditions or roof renovation projects.

isofast® SPIKE® twister DT**Technical information****Application**

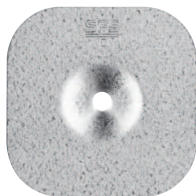
For the fastening of waterproof membrane and insulation to solid, dense concrete of minimum grade C12/15.

Material**Fastener**

- DT
- Case hardened carbon steel
- Durocoat® corrosion protection:
- Resistance at 15 cycles Kesternich test according to ETAG 006 - D.3.1. and FM Approval Standard 4470 requirements
- Environment-friendly, free of chromium VI

Stress plates

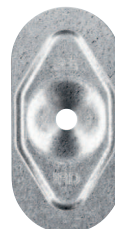
- ID-70x70 / IF/IG-C-82x40 / IRD-82x40
- Steel 1,0 mm, zinc plated
- Resistance at 15 cycles Kesternich test according to ETAG 006 - D.3.1. and FM Approval Standard 4470 requirements

Stress plates**ID-70x70**

- Stress plate for insulation, hole diameter 7,5 mm

IF/IG-C-82x40

- Stress plate for membrane and insulation on hard substrates, hole diameter 7,5 mm

IRD-82x40

- Stress plate for membrane and insulation, hole diameter 7,5 mm

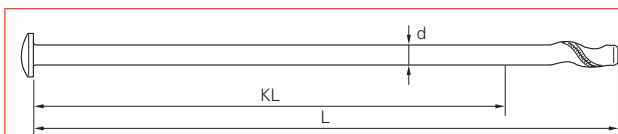
Tools and accessories**Recommendation for pre-drilling****ZD15**

- Use hammer drill with weight class 2 - 3 kg, impact energy ≤ 2,5 J



- Setting tool for the installation of SPIKE® twister fasteners

Order information

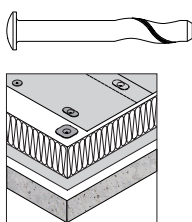
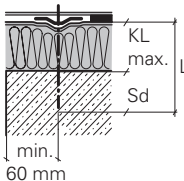


Mushroom head, $L \leq 51 \text{ mm } \varnothing 11,0 \text{ mm}$
 $L \geq 64 \text{ mm } \varnothing 9,7 \text{ mm}$



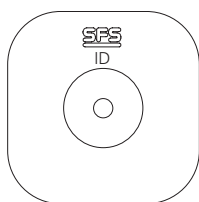
KL clamping length | M magazine loaded | d thread diameter | L length | TL thread length | t thickness of structure | All measures in mm

4

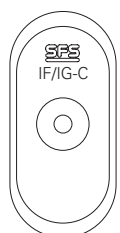
Product / Application	Approval	Order code			KL	Drill bits	Application information
		Type	d	L			
Carbon steel 	 	DT- 4,8x	28		3	4,8x160	
		DT- 4,8x	32		7	160	
		DT- 4,8x	38		13	160	
		DT- 4,8x	51		26	160	
		DT- 4,8x	64		39	160	
		DT- 4,8x	76		51	160	Sd (Setting depth): min. 25 mm Thickness concrete deck t: min. 60 mm. Concrete quality minimum C12/15. Insulation compressive strength at 10% compression min. 0,07 N/mm ² . Depth of pilot hole to be min. 15 mm deeper than the setting depth of the SPIKE® twister, depending on site conditions.
		DT- 4,8x	89		64	210	
		DT- 4,8x	102		77	210	
		DT- 4,8x	115		90	210	
		DT- 4,8x	127		102	210	
		DT- 4,8x	140		115	260	
		DT- 4,8x	152		127	260	

Stress plates

ID-70X70



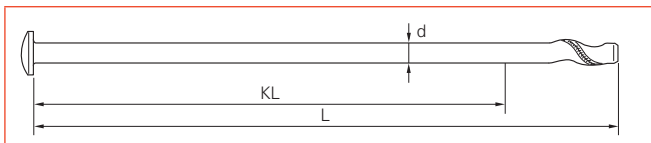
IF/IG-C-82X40

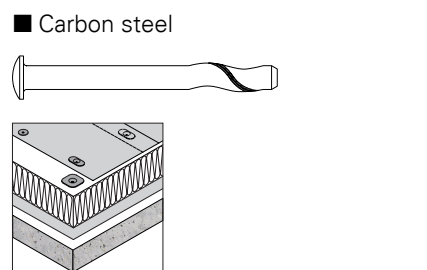


IRD-82X40



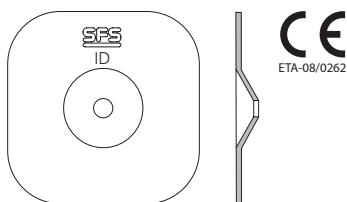
Order information

	Mushroom head Ø 11,0 mm	
KL clamping length M magazine loaded d thread diameter L length TL thread length t thickness of structure All measures in mm		

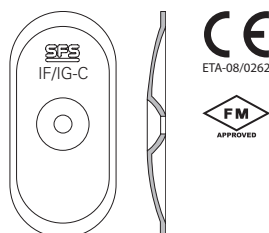
Product / Application	Approval	Order code DT- 6,3x 38			KL	Drill bits	Application information
		Type	d	L			
■ Carbon steel 		DT- 6,3x 38			6	6,3x160	
		DT- 6,3x 51			19	160	
		DT- 6,3x 102			70	210	
		DT- 6,3x 127			95	210	
		DT- 6,3x 140			108	260	
		DT- 6,3x 152			120	260	
		DT- 6,3x 165			133	260	Sd (Setting depth): min. 32 mm
		DT- 6,3x 178			146	260	
		DT- 6,3x 191			159	285	Thickness concrete deck t: min. 60 mm. Concrete quality minimum C12/15. Insulation compressive strength at 10% compression min. 0,07 N/mm².
		DT- 6,3x 203			171	285	
		DT- 6,3x 216			184	360	Depth of pilot hole to be min. 15 mm deeper than the setting depth of the SPIKE® twister, depending on site conditions.
		DT- 6,3x 229			197	360	
		DT- 6,3x 241			209	360	
		DT- 6,3x 254			222	360	
		DT- 6,3x 267			235	360	
		DT- 6,3x 279			247	410	
		DT- 6,3x 292			260	410	
		DT- 6,3x 305			273	410	
		DT- 6,3x 330			298	510	
		DT- 6,3x 356			324	510	
		DT- 6,3x 381			349	510	
		DT- 6,3x 406			374	510	
		DT- 6,3x 432			400	510	

Stress plates

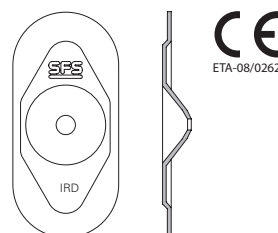
ID-70X70



IF/IG-C-82X40



IRD-82X40



isofast® SPIKE® twister DT-S**Technical information****Application**

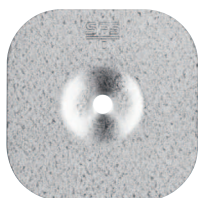
For the fastening of waterproof membrane and insulation to solid, dense concrete of minimum grade C12/15. For applications with internal relative humidity higher than 70%, chemically aggressive atmospheres / conditions, locations with aggressive local conditions (e.g. coastal environments). For refurbishment applications with unknown condition of the existing build-up or build-up with abrasive layers that may damage the corrosion protection. If extended design life / warranty is required.

Material**Fastener**

- DT-S
Austenitic stainless steel, grade
AISI 316, European Standard
1.4401, grade A4

Stress plates

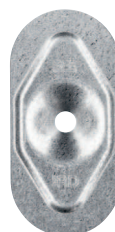
- ID-70x70 / IF/IG-C-82x40 / IRD-82x40
Steel 1,0 mm, zinc plated
Resistance at 15 cycles Kesternich
test according to ETAG 006 - D.3.1.
and FM Approval Standard 4470
requirements

Stress plates**ID-70x70**

- Stress plate for insulation,
hole diameter 7,5 mm

IF/IG-C-82x40

- Stress plate for membrane
and insulation on hard substrates,
hole diameter 7,5 mm

IRD-82x40

- Stress plate for membrane and
insulation, hole diameter 7,5 mm

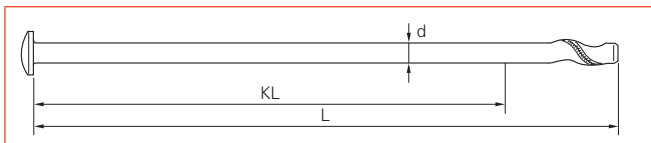
Tools and accessories**Recommendation for pre-drilling****ZD15**

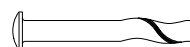
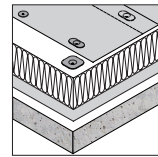
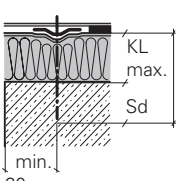
- Use hammer drill with weight class
2 - 3 kg, impact energy ≤ 2,5 J



- Setting tool for the installation of
SPIKE® twister fasteners

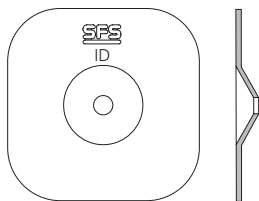
Order information

	Mushroom head, $L \leq 51 \text{ mm } \varnothing 11,0 \text{ mm}$ $L \geq 64 \text{ mm } \varnothing 9,7 \text{ mm}$  	
KL clamping length M magazine loaded d thread diameter L length TL thread length t thickness of structure All measures in mm		

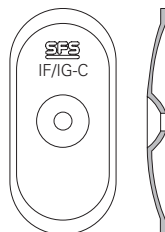
Product / Application	Approval	Order code DT-S- 4,8x 28			KL	Drill bits	Application information
		Type	d	L			
● Stainless steel  	 ETA-08/0262	DT-S- 4,8x 28	28		3	4,8x160	 Sd (Setting depth): min. 25 mm Thickness concrete deck t: min. 60 mm. Concrete quality minimum C12/15. Insulation compressive strength at 10% compression min. 0,07 N/mm². Depth of pilot hole to be min. 15 mm deeper than the setting depth of the SPIKE® twister, depending on site conditions. Availability on request.
		DT-S- 4,8x 32	32		7	160	
		DT-S- 4,8x 38	38		13	160	
		DT-S- 4,8x 51	51		26	160	
		DT-S- 4,8x 64	64		39	160	
		DT-S- 4,8x 89	89		64	210	
		DT-S- 4,8x 115	115		90	210	
		DT-S- 4,8x 140	140		115	260	

Stress plates

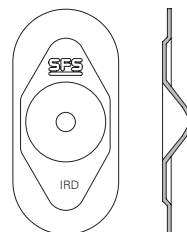
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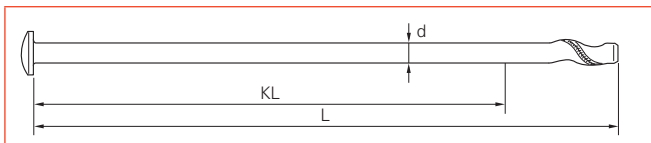
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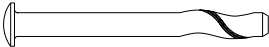
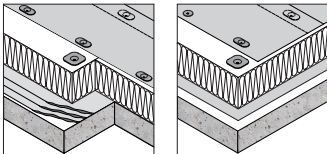
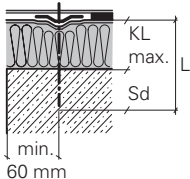
IRD-82X40



Order information

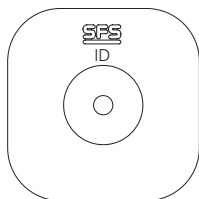
	Mushroom head Ø 11,0 mm 	
KL clamping length M magazine loaded d thread diameter L length TL thread length t thickness of structure All measures in mm		

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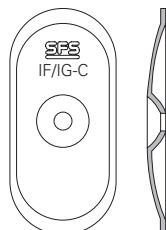
		Order code DT-S- 6,3x 152					
Product / Application	Approval	Type	d	L	KL	Drill bits	Application information
● Stainless steel  	 ETA-08/0262	DT-S- 6,3x 152			120	6,3x260	 Sd (Setting depth): min. 32 mm Thickness concrete deck t: min. 60 mm. Concrete quality minimum C12/15. Insulation compressive strength at 10% compression min. 0,07 N/mm². Depth of pilot hole to be min. 15 mm deeper than the setting depth of the SPIKE® twister, depending on site conditions. Availability on request.
		DT-S- 6,3x 178			146	260	
		DT-S- 6,3x 203			171	285	
		DT-S- 6,3x 229			197	360	
		DT-S- 6,3x 254			222	360	
		DT-S- 6,3x 279			247	410	
		DT-S- 6,3x 292			260	410	

Stress plates

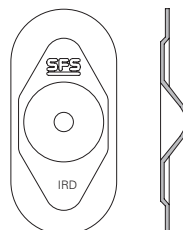
ID-70X70



IF/IG-C-82X40



IRD-82X40



isotak® SPIKE® twister DT / R45**Technical information****Application**

For the fastening of waterproof membrane and insulation to solid, dense concrete of minimum grade C12/15.

Material**Fastener**

- DT
- Case hardened carbon steel
- Durocoat® corrosion protection:
- Resistance at 15 cycles Kesternich test according to ETAG 006 - D.3.1. and FM Approval Standard 4470 requirements
- Environment-friendly, free of chromium VI

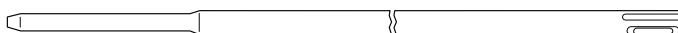
Sleeve

- R45
- High quality polypropylene, PP

Tools and accessories**Tool recommendation**

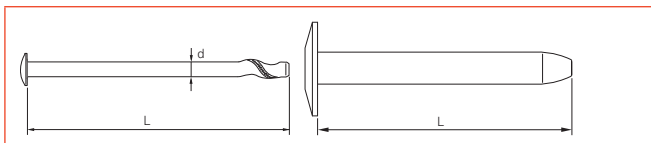
DT-M-500 / DT-M-750

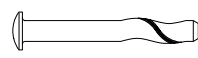
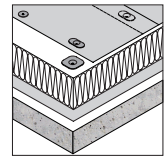
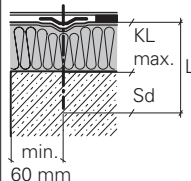
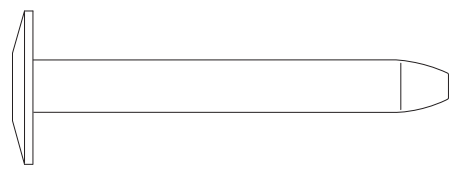
- For pre-drilling:
Use hammer drill with weight class 2 - 3 kg, impact energy $\leq 2,5$ J
- For installation:
Use hammer drill with weight class 2 - 3 kg, impact energy $\leq 2,5$ J, without rotation function, to hammer in the SPIKE twister

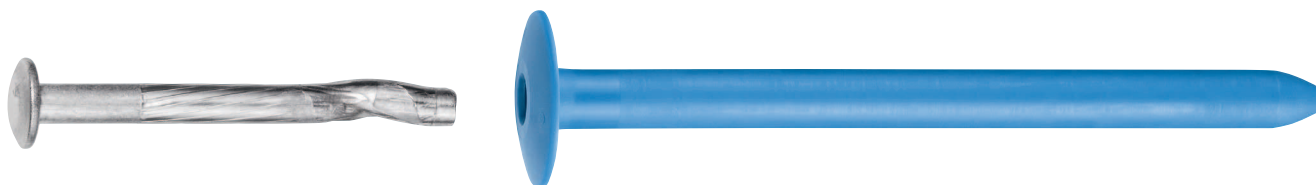


- Mechanical driving tool to hammer in the SPIKE® twister

Order information

	Mushroom head Ø 9,7 mm 	
KL clamping length M magazine loaded d thread diameter L length TL thread length t thickness of structure All measures in mm		

Product / Application	Approval	Order code DT- 4,8x 64			KL Application information
		Type	d	L	
■ Carbon steel  	 ETA-08/0262 	DT- 4,8x 64 DT- 4,8x 76 DT- 4,8x 89 DT- 4,8x 102 DT- 4,8x 115 DT- 4,8x 127 DT- 4,8x 140 DT- 4,8x 152			 Sd (Setting depth): min. 25 mm Thickness concrete deck t: min. 60 mm. Concrete quality minimum C12/15. Depth of pilot hole to be min. 15 mm deeper than the setting depth of the SPIKE® twister, depending on site conditions.
● Plastic 	 ETA-08/0262	R 45x 15 R 45x 35 R 45x 65 R 45x 85 R 45x 105 R 45x 135 R 45x 165 R 45x 185 R 45x 195 R 45x 225 R 45x 255 R 45x 285 R 45x 325 R 45x 365 R 45x 405 R 45x 485 R 45x 565 R 45x 645 R 45x 705			KL see combination table

isotak® SPIKE® twister DT-S / R45**Technical information****Application**

For the fastening of waterproof membrane and insulation to solid, dense concrete of minimum grade C12/15. For applications with internal relative humidity higher than 70%, chemically aggressive atmospheres / conditions, locations with aggressive local conditions (e.g. coastal environments). For refurbishment applications with unknown condition of the existing build-up or build-up with abrasive layers that may damage the corrosion protection. If extended design life / warranty is required.

Material**Fastener**

- DT-S
Austenitic stainless steel, grade
AISI 316, European Standard
1.4401, grade A4

Sleeve

- R45
High quality polypropylene, PP

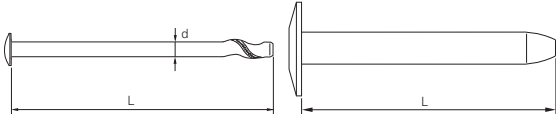
Tools and accessories**Tool recommendation****DT-M-500 / DT-M-750**

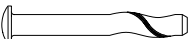
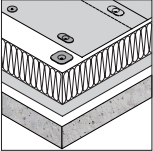
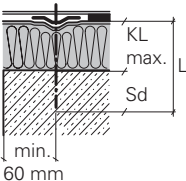
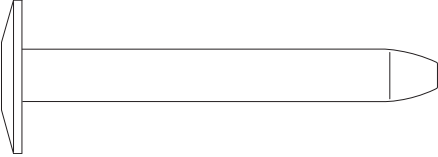
- For pre-drilling:
Use hammer drill with weight class
2 - 3 kg, impact energy $\leq 2,5$ J
- For installation:
Use hammer drill with weight
class 2 - 3 kg, impact energy
 $\leq 2,5$ J, without rotation function,
to hammer in the SPIKE twister



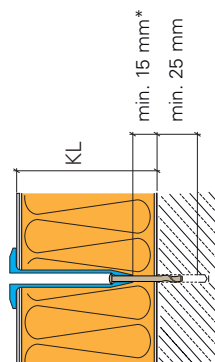
- Mechanical driving tool to hammer
in the SPIKE® twister

Order information

	Mushroom head Ø 9,7 mm 	
KL clamping length M magazine loaded d thread diameter L length TL thread length t thickness of structure All measures in mm		

Product / Application	Approval	Order code DT-S- 4,8x 64			KL Application information
		Type	d	L	
● Stainless steel   		DT-S- 4,8x 64 DT-S- 4,8x 89 DT-S- 4,8x 115 DT-S- 4,8x 140			 Sd (Setting depth): min. 25 mm Thickness concrete deck t: min. 60 mm. Concrete quality minimum C12/15. Depth of pilot hole to be min. 15 mm deeper than the setting depth of the SPIKE® twister, depending on site conditions. Availability on request.
● Plastic  		R R	45x 15 45x 35 45x 65 45x 85 45x 105 45x 135 45x 165 45x 185 45x 195 45x 225 45x 255 45x 285 45x 325 45x 365 45x 405 45x 485 45x 565 45x 645 45x 705		KL see combination table

KL (mm)



min. 15 mm*

DT-4,8xL
DT-S-4,8xL

Combination sleeve R45 and SPIKE® twister DT-4,8xL
SPIKE® twister DT-S-4,8xL**

**If a length is not available, take the next length.
Fastener range see chapter.

* thickness vapour barrier to be considered

KL = total roof build-up between top edge substrate and top edge membrane

KL = thickness vapour barrier
+ thickness insulation
+ thickness membrane

KL (mm)	Sleeve R45xL	Fastener DT-4,8xL DT-S-4,8xL	Setting depth*** (mm)
30	Sleeve length 15	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
40	Sleeve length 35	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
50	Sleeve length 55	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
60	Sleeve length 75	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
70	Sleeve length 95	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
80	Sleeve length 115	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
90	Sleeve length 135	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
100	Sleeve length 155	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
110	Sleeve length 175	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
120	Sleeve length 195	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
130	Sleeve length 215	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
140	Sleeve length 235	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
150	Sleeve length 255	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
160	Sleeve length 275	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
170	Sleeve length 295	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
180	Sleeve length 315	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
190	Sleeve length 335	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
200	Sleeve length 355	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
210	Sleeve length 375	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
220	Sleeve length 395	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
230	Sleeve length 415	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
240	Sleeve length 435	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
250	Sleeve length 455	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
260	Sleeve length 475	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
270	Sleeve length 495	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
280	Sleeve length 515	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
290	Sleeve length 535	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
300	Sleeve length 555	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
310	Sleeve length 575	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
320	Sleeve length 595	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
330	Sleeve length 615	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
340	Sleeve length 635	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
350	Sleeve length 655	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
360	Sleeve length 675	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
370	Sleeve length 695	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
380	Sleeve length 715	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
390	Sleeve length 735	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
400	Sleeve length 755	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
410	Sleeve length 775	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
420	Sleeve length 795	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
430	Sleeve length 815	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
440	Sleeve length 835	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
450	Sleeve length 855	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
460	Sleeve length 875	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
470	Sleeve length 895	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
480	Sleeve length 915	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
490	Sleeve length 935	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31
500	Sleeve length 955	64 : 64 : 76 : 89 : 102	36 : 26 : 28 : 31

***Depth of pilot hole to be 15 mm deeper than the setting depth, depending on site conditions.

Calculation:
Example:

100 mm
d-up (KL)

Sleeve length (L)
85 mm

 $\hat{\lambda}$ lengthType of fastener
DT-4 8x64