



CI/SFB		Xt6
January 2018		

# MECHANICAL AND ELECTRICAL GUIDE 2018





If you require further information you can contact us in a number of ways:

- Customer Services on FREEPHONE UK: 0800 652 9260 / ROI: 1 800 946 791
- Technical Helpdesk on FREEPHONE UK: 0800 731 4924 / ROI: 1 800 882 388
- Online at [www.itwcp.com](http://www.itwcp.com)
- Or through your local sales contact or ITWCP Dealer

ROI = Republic Of Ireland

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## ITW Construction Products



# CONSTRUCTION PRODUCTS

ITW Construction Products is one of seven major divisions of the Illinois Tool Works family, innovating, designing and manufacturing advanced industrial technology.

With six brands, namely Alpine, Gang-Nail, Cullen, Paslode, SPIT and Bravoll, all at the forefront of technology and enterprise for their respective markets, ITW Construction Products are committed to providing advanced trade solutions for professional users.

**Providing advanced trade solutions for professional users**

ITW Construction Products are known for their problem solving nature, and as such always remain a leader in technology, research and development; a trait that enhances our interaction and relationship with our customers and generates increased productivity for our end users.

## Part of a Global Company: ITW Inc



ITW - We are everywhere. With over 12,000 active patents ITW's products and solutions are at work all over the world, in deep-sea oil rigs, aerospace technology, bridges and wind turbines, supporting commercial buildings, healthcare, the spaces in which we live and work, the construction of those spaces, the cars we drive, and the mobile devices we rely on. We are never, whether we know it or not, more than a few steps from an innovative ITW solution.

We are committed to operational excellence and systematic new product development that helps our customers create the products and services that make our lives better.

**Committed to delivering only the highest quality products and services**



**For all timber construction**



**For concrete and steel construction**



## Innovation

The ability to invent, envision, and create something new is central to ITW's longevity and profitable growth. We draw deep insights from our key customer relationships and focus our efforts on designing and patenting new products and components that solve their specific challenges.

## Sustainable differentiation through innovation

Encouraging new ideas and providing a supportive, entrepreneurial framework, has produced ITW's strong culture of sustainable differentiation through innovation.



## R&D, Manufacturing and Product Testing



The majority of our product range is manufactured by ITW business units within Europe. Supported by in-house research and development, these technologically-led manufacturing plants are registered to ISO 9001 and ISO 14001 environmental standards.

Our own COFRAC accredited laboratory test our product developments in accordance with European Technical Approvals. In-house testing of concrete anchors includes use of a cracked concrete simulator and seismic table. This lab alone conducts 40,000 tests per year, using in excess of 600 tons of concrete.

## Approvals and Associations

As part of our continuous product development program, our Technical Team work closely with other leading companies within the construction industry in order to perform specific product testing and approval.



We are also partners/members with the following trade associations:





# TIME IS MONEY

For **MAXIMUM** productivity, greatest user benefits and highest quality tools and fixings, the **SPIT PULSA** system is the only choice



## MAXIMISE PRODUCTIVITY

Time is money. 8 times faster than conventional drill and fix. As a contractor you will complete phases sooner and projects faster.



## BEST IN CLASS SYSTEM

The technology-packed PULSA 800; the premium choice for specialist users.

Sophisticated fuel injection system ensures minimum wastage and enhances green credentials. Filtration protection keeps your tools safe and reliable.

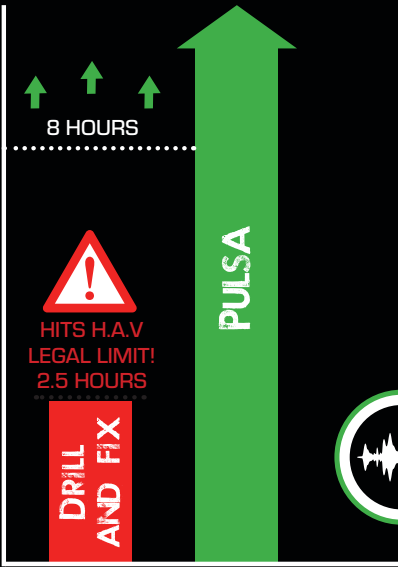


## CAPITALISE ON LABOUR

Less downtime and faster fixing means lower labour costs. PULSA maximises the potential of your most expensive asset. Operate at optimum speed, for longer, with up to eight PULSA fixings compared to one drill and fix.

# ONE DAY'S WORK

NUMBER OF FIXINGS COMPLETED



# HEALTH AND SAFETY

## H.A.V

Hand arm vibration is a serious health and safety risk. PULSA users do not even come close to worrying about exposure levels.

- PULSA + 10,000 fixes before exceeding H&S daily exposure above 5m/S2 A(8) ELV (400 points).



## DUST

Dust on-site is one of the hot topics for the industry.



# #NODUST

MINIMISE WORKING AT HEIGHT



UP TO 5 METRES EXTRA REACH

## USER COMFORT

Expertly balanced and designed ergonomically, minimising wrist strain.

Lightweight design eliminates fatigue; low actuation force to depress the tool and fire.

E-lift attachment for fastening at height. E-lift reduces the demand for expensive towers and platforms.

## H.A.V



### WHAT IS IT?

Hand Arm Vibration (HAV) is vibration transmitted into the hands and arms of an operator when working with hand-held power tools.



### WHY IS IT AN ISSUE?

It can cause a number of conditions including:

- Carpal Tunnel Syndrome (a nerve disorder)
- Loss of touch, sense and temperature
- Numbness and tingling (long and short term)
- Loss of grip, strength and manual dexterity.



### WHAT DOES THE LAW SAY?

The law requires you as a business owner to take certain steps to protect employees.

- Assess the risk and plan for control - manage the risk
- Provide suitable equipment for your employees
- Give information and training on risks and safe use of equipment
- Take further action when daily vibration exposure reaches a certain value.



### HOW DOES IT AFFECT MY BUSINESS?

- The HSE estimates that over 36,000 people have an advanced stage of Vibration White finger(VWF)
- VWF is a leading reason for occupational health claims against employers.



### CONTROL

- Control the risk by looking for alternate ways of fixing to eliminate the vibrating equipment. The example shown here is to use the Pulsa Direct Fastening System rather than drilling
- Minimise the time required for the application. The Pulsa system is the fastest way to install cable management and wiring accessories.



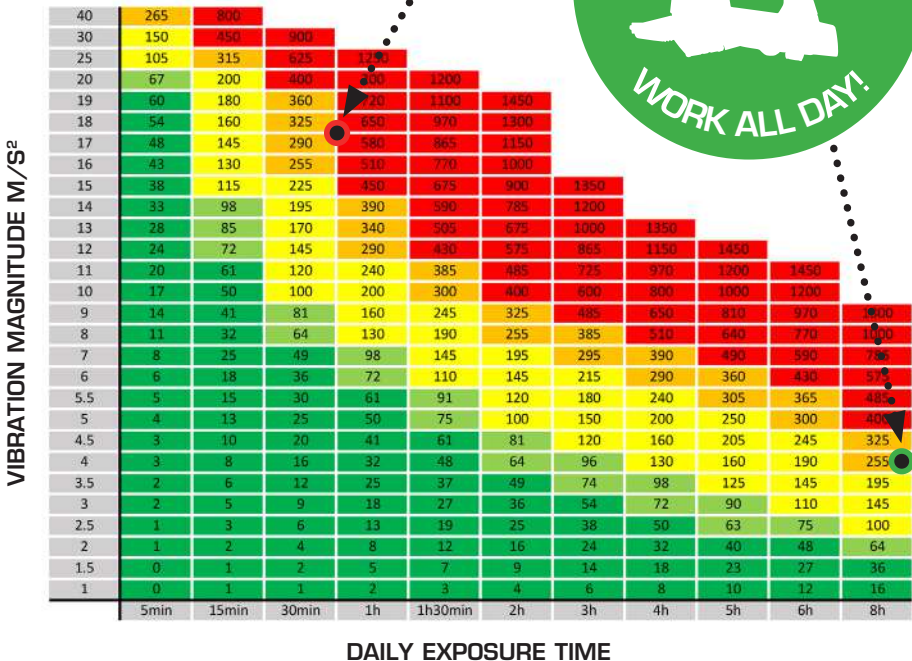
# MEASURE | MANAGE | MINIMISE

Every tool can have its vibration measurement cross-correlated with the duration of time used daily, to see when a user must legally stop using a piece of equipment.

## VIBRATION EXPOSURE TABLE

**Drill And Fix** - Operating a market leading cordless hammer drill with **17.5 m/s<sup>2</sup>** vibration, a user can only operate for around **45 minutes** before hitting the **legal exposure limit**.

**PULSA** - Using the SPIT PULSA direct fastening system, with **4.1 m/s<sup>2</sup>** vibration, a user can work for **8 hours solid**, and still be under the legal exposure limit.



## PULSA 800E

Improve your productivity - work faster than ever before



### Applications

- Fixing of pipes, cables wiring accessories
- Direct fixing of electrical trunking and junction boxes
- Floors, walls overhead fixings into: concrete, pre-stressed concrete, masonry and steel

### Features and Benefits

- Low actuation force - work faster, easier & less fatigued especially overhead
- Slim & streamlined - best line of sight and access to tight locations
- Tool free depth of drive - perfect finishing with all accessories
- LED display showing remaining fuel & battery power
- Start & Go® allowing 3000 shots per charge
- Improved dust protection - reduces the need for servicing



### Product Code

Description	Box Qty	Code
Pulsa 800E	1	018350

### Technical Data

Fastener length range	15-40 mm
Product weight	3.7 kg
Dimensions (DxLxW)	309 x 385 x 114 mm
Power	82 J
Magazine capacity	20 fixings
Fuel cell capacity	500
Fixings per battery charge	3000 shots
Battery charge time	90 Min.
Battery type	Lithium
Operating temperature range	-15°C...+49°C
Maximum Cycle rate per sec (fixings)	2 fixings
Peak Sound Pressure [EN 12549] LpCpeak	135 dB(C)
Workplace Relevant Emission, LpA	96 dB(A)
Vibration [EN ISO 8662-11] hav	4.1 m/s <sup>2</sup>

### Kit Contains

- Pulsa 800E
- High impact carry case
- 1x battery
- All in one charger
- Safety glasses to EN166:F
- Single shot cover guard
- Instructions manual
- Allen key
- Safety instructions
- CE Declaration of Conformity



### Materials



## Consumables



### Best-in-class pins, ensuring excellent success rate



#### 800E Pin Selection Guide

Substrate	DT Elec	E Clip	DT Clip	P Clip	Cable Bow	Steel Band	Steel P Clip	TTH Clip	Fire Fak
Steel	HCB 15-17	HCB 15-17	HCB 15-17	HCB 15-17	HCB 15-17	HCB 15	HCB 15	HCB 15	HCB 15
Hard Concrete	HCB 17-22	HCB 32	HCB 17-22	HCB 17-22	HCB 26	HCB 17-22	HCB 17-22	HCB 17-22	HCB 17-22
Concrete & Brick	HCB 27-32	HCB 32	HCB 27-32	HCB 27-32	HCB 30-35	HCB 30-35	HCB 30-35	HCB 30-35	HCB 30-35

\*M6 - M8 Threaded Rod maximum length 600mm, static loads only, install at right angles.  
 Steel Support Material:  
 Min Thickness = 6.5mm, Recommended static load = 150 kg max  
 Concrete:  
 Recommended static load = 10 kg max (C20/25)  
**All figures given are to be used as a guide and a job site suitability test is always recommended. Technical Helpline: 0800 731 4924.**

#### C6 P800

Standard pins with gas for concrete



Description	Length (mm)	Fuel Cells	Box Qty	Code
C6 20mm	20	1	500	057540
C6 25mm	25	1	500	057541
C6 30mm	30	1	500	057542
C6 35mm	35	1	500	057543
C6 40mm FH	40	1	500	057544

10 strip collation (suitable for 20 and 50 pin magazine) + 1 x Fuel Cell

#### HC6 P800

High performance pins with gas for steel, hard and pre-stressed concrete



Description	Length (mm)	Fuel Cells	Box Qty	Code
HC6 15mm	15	1	500	057550
HC6 17mm	17	1	500	057551
HC6 22mm	22	1	500	057552
HC6 27mm	27	1	500	057553
HC6 32mm	32	1	500	057554

10 strip collation (suitable for 20 and 50 pin magazine) + 1 x Fuel Cell

#### CG6 P800

Standard soft washed pins with gas for concrete and stone



Description	Length (mm)	Fuel Cells	Box Qty	Code
HC66 15mm	15	1	500	057567
HC66 22mm	22	1	500	057568
CG6 20mm	20	1	500	057563
CG6 25mm	25	1	500	057564
CG6 30mm	30	1	500	057565
CG6 35mm	35	1	500	057566

10 strip collation + 1 x Fuel Cell. Single shot only - cannot be used in magazine

#### HC6 FH P800

High performance flush head pins with gas for steel, hard and pre-stressed concrete



Description	Length (mm)	Fuel Cells	Box Qty	Code
HC6 15mm FH	15	1	500	057555
HC6 17mm FH	17	1	500	057556
HC6 22mm FH	22	1	500	057557
HC6 27mm FH	27	1	500	057558

10 strip collation (suitable for 20 and 50 pin magazine) + 1 x Fuel Cell

#### Accessories

Description	Box Qty	Code
20 Pin Magazine for P800	1	014623
50 Pin Magazine for P800	1	014640
Battery for Pulsa 800	1	018483
Battery Charger for Pulsa 800	1	018484
Pin Guide for Pulsa 800E	1	018423
Single Shot Blanking Plate for Pulsa 800	1	018490
P800 Blister Pack of Fuel Cells	2	011773
Flat Magnetic Pin Guide for P800	1	014642
Impulse Cleaner 300ml	1	115251
Impulse & Pulsa Cleaning Kit	1	013690
Impulse Lubricating Oil	1	401482
Safety Glasses to EN166:F	1	014121
Magnetic Washer Pin Guide for P800	1	014641
E-Lift Pole Tool for Pulsa 800E	1	018820
E-Lift Tube Extension 75cm for Pulsa 800E	1	018849



011773



018483



014623



018490



014641



014642

## PULSA 800E Cable Management Accessories

— An extensive range of SPIT cable and conduit fastening accessories designed for use with the Pulsa gas systems. The Pulsa 800E is compatible with all Cable management accessories. Each accessory fits directly to the tool for a one step fix.



### E-CLIP

For fast installation of RNC and rigid conduit



Description	Box Qty	Code
Grey Conduit Clip 20mm	100	565032
Grey Conduit Clip 25mm	100	565033
Grey Conduit Clip 32mm	50	565034
Grey Conduit Clip 40mm	50	565035
Grey Conduit Clip 16mm	100	567214
Grey Conduit Clip 50mm	50	567215

### P-CLIP

For fastening conduit and pipework to floors and walls



Description	Box Qty	Code
Grey Single P Clip 16mm	100	567206
Grey Single P Clip 25mm	50	567208
Grey Single P Clip 22mm	100	565083
Grey Single P Clip 20mm	100	565082
Grey Double P Clip 20mm	50	565086
Grey Double P Clip 22mm	50	565087
Grey Double P Clip 16mm	50	567209

### STEEL P CLIP

Steel clip designed to fix conduits tubes to concrete



Description	Box Qty	Code
8mm Steel Single P Clip	300	016994
10mm Steel Single P Clip	300	016985
16mm Steel Single P Clip	150	016988
20mm Steel Single P Clip	150	016990
22mm Steel Single P Clip	100	016991
25mm Steel Single P Clip	100	016993
28mm Steel Single P Clip	100	016994
32mm Steel Single P Clip	50	016995

### CLIP ELEC

All purpose base plate for use with cable ties for fastening conduit cable. Cable ties not included



Description	Box Qty	Code
Clip Elec All-purpose Cable Tie Clip 9mm	100	011203

### CABLE BOW FIXING

Single and double bows for fixing of cables without trays. Designed for 3 core x 1.5mm<sup>2</sup>



Description	Box Qty	Code
Single Cable Bow	50	565915
Single Fire Retardant	50	565917
Double Cable Bow	25	565916
Double Fire Retardant	25	565918

\* Burning Properties: Incandescent wire test according to CEI 695-2-1/2: 650° C passed

### CT-CLIP

Fixing with moulded cable tie for securing facilities up to 32mm diameter



Description	Box Qty	Code
Grey Cable Tie Clip 16 - 32mm	100	565508

### ALL-PURPOSE STEEL BAND

Versatile all-purpose steel band for fixing any electrical services



Description	Box Qty	Code
17 x 0.8mm x 10 metres	1	056561
12 x 0.8mm x 10 metres	1	056562
26 x 0.8mm x 10 metres	1	056563

## PULSA 800E Cable Management Accessories

### FIREFIXSTEEL P CLIP

Unique cable fixing from Phrysmian and Draka Firetuf, used to fix fire performance cables. Meets the cable support requirements of BS5839-1:2002. 10 times quicker than conventional methods. Fits easily onto Pulsa 800 E tool system. Single and Double clips are available. Adapter for double clips included in every box.



Description	Cable Ø Suitability	Wire Guide	Box Qty	Code
Single Clip Size 01 Red	$8.0\text{mm}^2 \leq D < 8.2\text{mm}^2$	2 core x 1.5mm <sup>2</sup>	500	921622
Single Clip Size 01 White	$8.0\text{mm}^2 \leq D < 8.5\text{mm}^2$	2 core x 1.5mm <sup>2</sup> or 3 core x 1.0mm <sup>2</sup>	500	924252
Double Clip Size 02 Red	$8.0\text{mm}^2 \leq D < 8.5\text{mm}^2$	2 core x 1.5mm <sup>2</sup> or 3 core x 1.0mm <sup>2</sup>	200	921623
Double Clip Size 04 Red	$8.5\text{mm}^2 \leq D < 9.0\text{mm}^2$	4 core x 1.0mm <sup>2</sup> or 3 core x 1.5mm <sup>2</sup>	200	921624
Double Clip Size 02 White	$8.0\text{mm}^2 \leq D < 8.2\text{mm}^2$	2 core x 1.5mm <sup>2</sup>	200	924251
Double Clip Size 04 White	$8.5\text{mm}^2 \leq D < 9.0\text{mm}^2$	4 core x 1.0mm <sup>2</sup> or 3 core x 1.5mm <sup>2</sup>	200	924253

### METAL WASHER

For use with magnetic pin guide to fix wire mesh and membranes. Use with Magnetic Pin Guide O14641



Description	Box Qty	Code
Steel Washer 25mm	1000	011204

### Threaded Rod Hanger Clip (TRH)

An ideal alternative to traditional drop-in anchors.



Description	Box Qty	Code
M6 - M8 Threaded Rod Hanger	100	011430

Maximum Load 10kg. Static loads only. Please note: Do not use PULSA with rod exceeding 600mm or rod diameter greater than Ø 8mm.

## PULSA 800 E-LIFT



Safe, fast & comfortable solution



### Product Code

Description	Box Qty	Code
E-Lift Pole Tool for Pulsa 800E	1	018820
E-Lift Tube Extension 75cm for Pulsa 800E	1	018849

### Features and Benefits

- Simple design – easy to assemble and operate
- 30% lower actuation force & low recoil – prevents user fatigue compared to PAT alternative
- Working from a comfortable position and 2 stage firing increases personal safety
- Additional extension pole – reach up to 5m ceiling
- Fix floor to ceiling
- Reduce or eliminate requirement for costly, bulky platforms

### Applications

- Pipes, cables and wiring accessories



## VIPER XTREM

High performance multi-application chemical resin for cracked concrete and seismic applications



280ml

410ml

### Materials

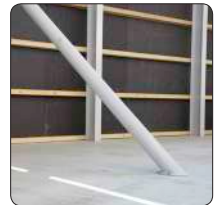
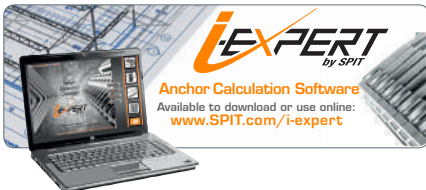


### Applications

- Seismic applications
- Structural steel anchoring
- Safety barriers
- Balustrades
- Guard rails
- Post installed rebar in non-cracked and cracked concrete as well as seismic conditions.

### Features and Benefits

- ETA approved for structural applications in non-cracked, cracked and seismic conditions.
- Enhanced productivity with easy flow and usability from -10°C to +40°C
- Approved in dry, damp and flooded holes
- Reduced product waste thanks to rigid cartridge
- Visual mixing control through transparent nozzle
- 18 months shelf life (unopened or reuse)
- Suitable for all drilling methods including diamond
- Odour free and no volatile organic compound (rating A+)
- Fire approval



### Product Code

Description	Box Qty	Code
VIPER XTREM 280	1	060187
VIPER XTREM 410	1	060189

### Approvals



ETAG 17/0514



ETAG 17/0513



R120 Fire Resistance



C1 & C2 Seismic Resistance



Certified Cracked & Non-Cracked Concrete



XTREM Product

### Curing Time

Temperature	90 min.	24 h
-10°C → -5°C	90 min.	24 h
-14°C → 0°C	50 min.	4 h
1°C → 5°C	25 min.	2 h
6°C → 10°C	15 min.	90 min.
11°C → 20°C	7 min.	60 min.
21°C → 30°C	4 min.	45 min.
31°C → 40°C	2 min.	30 min.

## MULTI-MAX

Multiple ETA approved versatile resin covering a broad range of applications & materials



280ml

410ml

### Materials



### Applications

- Air conditioning
- Signage
- Guard Rails
- Scaffolding
- Post installed rebar
- Structural steel anchoring
- Safety barriers and balustrades

### Features and Benefits

- ETA Approved for masonry M8 to M12
- ETA Approved for studs M8 to M24 in non-cracked concrete
- ETA Approved for post installed rebar 8 to 20 mm
- Cures in substrate temperature range -5°C to 40°C
- Twin chambers cartridge ensures ideal mix of product reducing initial product waste
- 280 ml suitable for silicon gun
- Volatile Organic Compound (VOC) rating A+
- 18 months shelf life ensures less wastage

**i-EXPERT**  
by SPIT

Anchor Calculation Software  
Available to download or use online:  
[www.SPIT.com/i-expert](http://www.SPIT.com/i-expert)



### Product Code

Description	Box Qty	Code
MULTI-MAX 280ml Cartridge + 2 Nozzles	1	060040*
MULTI-MAX 410ml Cartridge + 2 Nozzles	1	060047*

\* Must be ordered in multiples of 12.

### Approvals



ETA Option 7  
no 13/0435  
(STUD)



ETA TR 023  
no 13/0436  
(REBAR)



ETA TR 029  
no 13/0437  
(MASONRY)



Volatile  
Organic  
Compound

### Curing Time

Temperature	Initial Cure	Final Cure
-5°C → 0°C	-	6 h 00
1°C → 5°C	18 min.	3 h 00
6°C → 10°C	12 min.	1 h 30
11°C → 20°C	6 min.	1 h 00
21°C → 30°C	4 min.	45 min.
31°C → 40°C	2 min.	35 min.

## THREADED STUDS & SOCKETS FOR CHEMICAL RESINS

### THREADED STUDS - ZINC PLATED MINIMUM 5µM DOUBLE CHISEL POINT



Description	Anchor Thread Ø	Anchor Length (mm)	Drill Hole Ø (mm)	Max. Fixing Thickness (mm)	Box Qty	Code
M8 x 110mm Threaded Chisel ZP	M8	110	10	15	10	055800
M10 x 130mm Threaded Chisel ZP	M10	130	12	20	10	055801
M12 x 160mm Threaded Chisel ZP	M12	160	14	25	10	055802
M16 x 190mm Threaded Chisel ZP	M16	190	18	35	10	055803
M20 x 260mm Threaded Chisel ZP	M20	260	25	65	5	055804

Grade 5.8 Carbon Steel. \* Maxima Threaded Studs

### THREADED STUDS - STAINLESS STEEL A4 - 316 45° CHISEL POINT



Description	Max Fixture Thickness (mm)	Hole Ø (mm)	Min. Hole Depth (mm)	Box Qty	Code
M8 x 110mm SS A4	15	10	80	10	920017
M10 x 130mm SS A4	20	12	90	10	920018
M12 x 160mm SS A4	25	14	110	10	920019
M16 x 190mm SS A4	35	18	125	10	920020
M20 x 260mm SS A4	65	25	170	10	920021
M24 x 300mm SS A4	63	28	210	5	920022

## CHEMICAL RESIN ACCESSORIES AND CLEANING ACCESSORIES

### PLASTIC SLEEVES FOR HOLLOW BASE MATERIALS AND OVERHEAD APPLICATIONS IN SOLID MATERIALS



Description	Drill Hole Ø (mm)	To Suit Stud Ø	Box Qty	Code
Plastic Sleeve 15 x 85mm	15	M6 - M8	10	557070
Plastic Sleeve 15 x 130mm	15	M8 - M10	10	557080
Plastic Sleeve 20 x 85mm	20	M8 - M10	10	557090
Plastic Sleeve 12 x 45mm	12	M10 - M12	10	565012

### CLEANING BRUSHES FOR HOLE CLEANING



Description	Box Qty	Code
11mm Wire Brush Head	1	052971
15mm Wire Brush Head	1	052973
20mm Wire Brush Head	1	052974
22mm Wire Brush Head	1	052975
26mm Wire Brush Head	1	052976
Wire Brush Extension Rod	1	051010
Wire Brush T Handle	1	051009

### BLOW OUT TOOL FOR HOLE CLEANING



Description	Box Qty	Code
Hand Operated Blow Out Tool	1	065990

### CLEANING KIT



Description	Box Qty	Code
Manual Cleaning Kit + Tool Box	1	055832



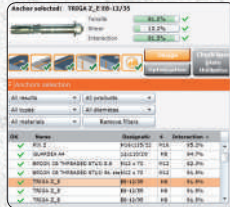
# EXTENSIVE & SEAMLESS SUPPORT



**SPIT i-Expert** is the quickest and easiest way to get a completely accurate specification for any approved SPIT anchor.

**SPIT i-Expert** performs calculations according to ETAG and Eurocode 2 guidelines and is supplied with the SPIT ETA approval library.

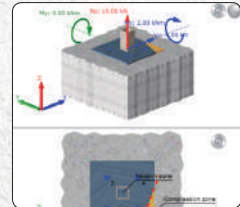
For advice, demonstration or training on **SPIT i-Expert** contact our Technical Helpline: 0800 731 4924.



**3D visual interface** Allows you to create 3D design models for all applications.

**Logical and intuitive interface** The main menu guides you through easy to follow, logical steps.

**User-friendly results** By using the filters you can select the optimal anchor, have access to resistance and installation data and edit the calculation sheet in PDF format.



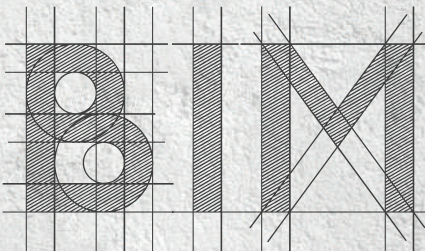
**Free design mode** Allows application design with defined asymmetric anchor positions for rebar interference and difficult design cases.

**European calculation method** Design according to ETAG and Eurocode 2 guidelines.

**Checking of the base plate thickness** Allows you to create a design model of the base plate using finite elements.

i-Expert is accessible from any internet browser, and an offline version is also available to download from our website:

[www.SPIT.com/i-expert](http://www.SPIT.com/i-expert)



## Building Information Modelling

SPIT has implemented BIM in order to provide designers & specifiers the full suite of specification tools. This is in preparation for the government's intention to require collaborative 3D BIM for all projects, with asset information and documentation being electronic on all projects by 2016.

SPIT has worked extensively to provide a comprehensive library of products that can be selected and specified. The **SPIT BIM Library** can be installed straight into Autodesk software, or alternatively i-Expert can do the design, specification and output the BIM model and data for insertion straight into the project.

These tools are developed to enhance your **SPIT** experience when designing and specifying anchors.

- Manufacturer produced models & associated data
- Library plug-in for Autodesk
- i-Expert specification & BIM model output functionality





**X**  
XTREM

# TAPCON®

**CUTTING EDGE PERFORMANCE**

**BORN TO PERFORM**

Self-tapping anchor for cracked and non-cracked concrete, suitable for safety critical applications.

Building on 50 years of experience, the NEW SPIT Tapcon Screw range marks the 5th generation of the Tapcon Anchor. Suitable for the most demanding applications, the new patented thread design allows for incredibly high loads, a range that provides time saving solutions without compromising on safety, whilst offering a fast installation that only a mechanical anchor can offer.

Tapcon concrete screws are simple to install, give a high performance to diameter ratio and can be completely removed after use. Due to their undercut action Tapcon have a low expansion force, which gives the flexibility of close edge and spacing distances unobtainable in traditional mechanical anchoring.



## Features & Benefits

### SEISMIC ASSESSMENT

Tapcon XTREM C1 can be used in seismic performance category according to ETAG001 annex E.

### FIRE RESISTANCE

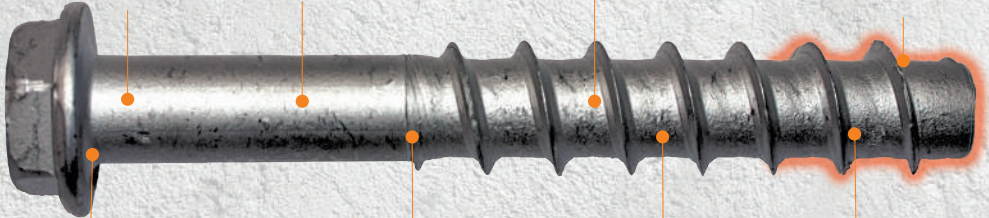
Suitable for use where fire resistance requirements are specified (see ETA).

### EASY SETTING

Patented thread design provides easy setting.

### INDUCTION HARDENING

Gives high resistance at the top of the thread to tap concrete and enough flexibility on the rest of the thread to avoid any breakage.



### WIDE RANGE

Available in several sizes and 4 head types for all uses: diameter 5 to 14, various lengths, zinc coated, zinc flake and stainless steel.

### ZINC FLAKE

500 hrs salt spray zinc flake coating provides excellent resistance to corrosion (HFL version only).

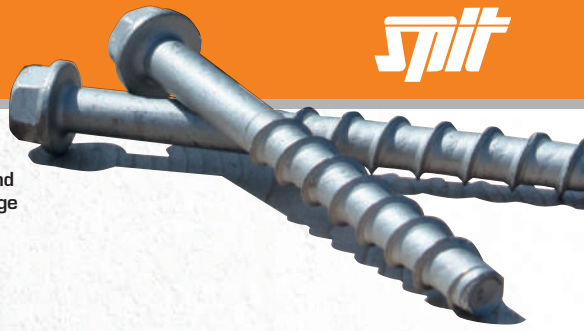
### ETA APPROVED

Can be used in both cracked and non-cracked concrete.

### R&D INNOVATION

Huge increase in performance in cracked concrete compared with the former 16/0276 product (design values by ETA).





## Range

With 58 different products, 4 head styles and three different finishes, the **SPIT Tapcon** range offers an approved solution for a wide range of applications in industrial, commercial and residential construction.

## Head Types



**HFL**  
**(HEX FLANGED)**



**DOME**



**ROD**



**CSK**  
**(COUNTERSUNK)**

## XTREM Product

An **XTREM** Product is the highest performing **SPIT** product in each category for safety critical applications in cracked concrete or seismic areas.

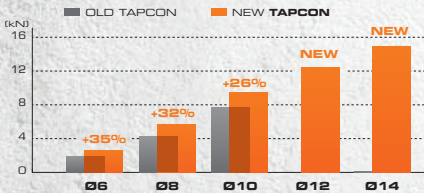


**XTREM**

## Performance

The new patented thread design allows for very high loads, even with the smaller diameter fixings. This engineered thread design not only provides increased capacity but also provides a faster installation speed.

## R&D INNOVATION



## Approvals & Fire Rating

The **NEW SPIT Tapcon** concrete screw range includes products that are **ETA** approved for use in cracked and non-cracked concrete.

Suitable for use where fire resistance requirements are specified. Tested behaviour under fire exposure up to 2 hours.



CERTIFIED  
CRACKED &  
NON-CRACKED  
CONCRETE



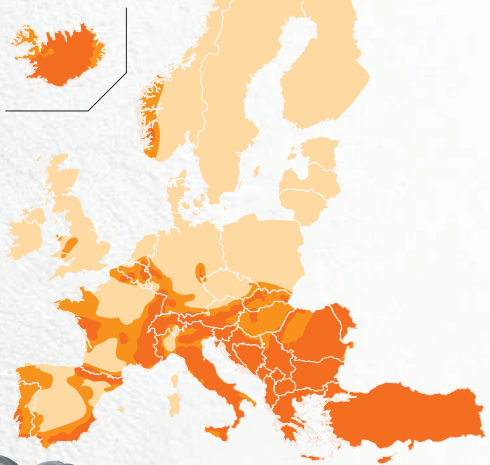
FIRE  
RESISTANCE

## Seismic

A large part of the European territories are concerned by seismic hazards and 100% of it is concerned by cracked concrete applications. The table below gives the seismic anchor approval requirement depending on the ground acceleration and the category of buildings.

Class	$a_g S^2$	I	II	III	IV
Very low <sup>a</sup>	$a_g S \leq 0,05 \text{ g}$	No additional requirement			
Low <sup>b</sup>	$0,05 \text{ g} < a_g S \leq 0,10 \text{ g}$	<b>C1</b>	<b>C1<sup>c</sup> or C2<sup>c</sup></b>	<b>C2</b>	
> Low	$a_g S > 0,10 \text{ g}$	<b>C1</b>	<b>C2</b>		

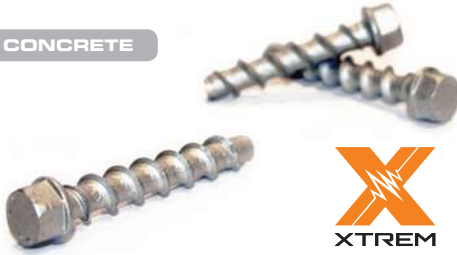
a - The values defining the seismicity levels may be found in the National Annex of EN 1998-1.  
b - Definition according to EN 1998-1:2004, 3.2.1.  
c -  $a_g$  design ground acceleration on Type A ground (EN 1998-1:2004, 3.2.1).  
S - Soil factor (see e.g. EN 1998-1:2004, 3.2.2).  
d - C1 for 'Type B' connections (see TR045 §5.1) for fixings of non-structural elements to structures  
e - C2 for 'Type A' connections (see TR045 §5.1) for fixing structural elements to structures



## TAPCON HFL XTREM

ETA and seismic application approved concrete anchor screw, that reduces installation time and edge and spacing distance

### CONCRETE



#### Materials



#### Applications

- Formwork
- Mechanical and electrical
- Façade and curtain walls
- Demolition
- Safety barriers and hand rails
- Security gates and fencing
- Racking and storage
- Machinery and equipment
- Stadium seating
- Signage and lighting
- Infrastructure - energy, road, rail
- HVAC

#### Features and Benefits

- ETA Option 1 approved anchor for cracked & non-cracked concrete
- TAPCON XTREM range approved for C1 seismic applications
- Fire approval
- Longer effective thread allows highest performance within the market
- New patented thread design provides easy setting
- 500hrs salt spray zinc flake coating
- Adjustable anchor for re-alignment without loss of performance
- Removable anchor allows for temporary fixings
- Large choice of drilling diameters, heads & lengths



#### Approvals



ETAG 001-3  
15/0278



ETAG 001-6  
15/0373



R120 Fire  
Resistance



C1 Seismic  
Resistance

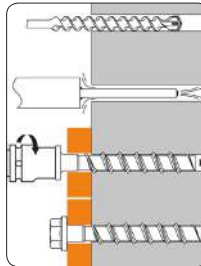


Certified  
Cracked &  
Non-Cracked  
Concrete



XTREM  
Product

#### Installation



Anchor Calculation Software  
Available to download or use online:  
[www.SPIT.com/i-expert](http://www.SPIT.com/i-expert)



## Product Range

### TAPCON HFL

ZINC FLAKE PLATED (500HRS SALT SPRAY TEST)

Head Type: Hex Head



### TAPCON HFL XTREM



Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Wrench size	Clearance Ø (mm)	Box Qty	Code
8X50/5 ZFP	50	8	55	5	13	12	50	058733
8X60/15 ZFP	60	8	55	15	13	12	50	058734
8X70/25-5 ZFP	70	8	55	25	13	12	50	058735
8X80/35-15 ZFP	80	8	55	35	13	12	50	058736
8X100/55-35 ZFP	100	8	55	55	13	12	50	058737
8X120/75-55 ZFP	120	8	55	75	13	12	50	058738
8X140/95-75 ZFP	140	8	55	95	13	12	50	058739
10X60/5 ZFP	60	10	65	5	15	14	50	058740
10X70/15 ZFP	70	10	65	15	15	14	50	058741
10X90/35-5 ZFP	90	10	65	35	15	14	50	058742
10X100/45-15 ZFP	100	10	65	45	15	14	50	058743
10X120/65-35 ZFP	120	10	65	65	15	14	50	058744
10X140/85-55 ZFP	140	10	65	85	15	14	50	058745
10X160/105-75 ZFP	160	10	65	105	15	14	50	058746
14X110/35 ZFP	110	14	85	35	21	18	25	058767
12X110/45-10 ZFP	110	12	75	45	17	16	25	058748
12X80/15 ZFP	80	12	75	15	17	16	25	058747
14X80/5 ZFP	80	14	85	5	21	18	25	058766
14X130/55-15 ZFP	130	14	85	55	21	18	25	058768
14X150/75-35 ZFP	150	14	85	75	21	18	25	058769

### TAPCON HFL CONCRETE SCREW

Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Wrench size	Clearance Ø (mm)	Box Qty	Code
5X40/5 ZFP	40	5	40	5	10	7	100	058726
5X50/15 ZFP	50	5	40	15	10	7	100	058727
5X60/25 ZFP	60	5	40	25	10	7	100	058728
6X40/5 ZFP	40	6	40	5	13	8	100	058729
6X50/15 ZFP	50	6	40	15	13	8	100	058730
6X80/45-25 ZFP	80	6	40	45	13	8	100	058731
6X100/65-45 ZFP	100	6	40	65	13	8	100	058732

### TAPCON HFL

STAINLESS STEEL A4

Head Type: Hex Head



### TAPCON HFL XTREM



Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Wrench size	Clearance Ø (mm)	Box Qty	Code
8X70/25-5 A4 SS	70	8	55	25	13	11	50	058809
8X80/35-15 A4 SS	80	8	55	35	13	11	50	058810
10X90/35-5 A4 SS	90	10	65	35	15	13	50	058811
10X100/45-15 A4 SS	100	10	65	45	15	13	50	058812
10X120/65-35 A4 SS	120	10	65	65	15	13	50	058813

### TAPCON HFL CONCRETE SCREW

Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Wrench size	Clearance Ø (mm)	Box Qty	Code
6X50/15 A4 SS	50	6	40	15	13	8	100	058806
6X60/25-5 A4 SS	60	6	40	25	13	8	100	058807

Concrete
  Steel
  Multi-Material
  Masonry
  Plasterboard

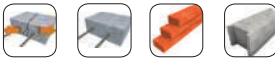
## TAPCON ROD

ETA Approved, fire rated concrete anchor, ideal for installing support systems and services

CONCRETE



### Materials



### Features and Benefits

- ETA Option 1 approved anchor for cracked & non-cracked concrete
- Ideal for the installation of MEP, HVAC and fire protection systems
- Faster and safer than using conventional drop-in anchor fixings
- New patented thread design for increased load and fast installation
- Suitable for use in hollow concrete slab
- Dual M8/M10 thread
- Fire rated up to 2 hours

### Product Range

TAPCON ROD HANGER FLANGED CONCRETE SCREW  
ZINC PLATED

Head Type: Flanged



Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Wrench size	Clearance Ø (mm)	Box Qty	Code
6X35 M8/M10	35	6	40	13	8	100	058785
6X55 M8/M10	55	6	60	13	8	100	058786



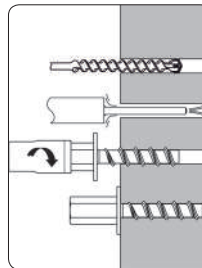
### Applications

- MEP
- HVAC
- Signage and lighting
- Suspended ceiling
- Support services
- Fire protection

### Approvals



### Installation



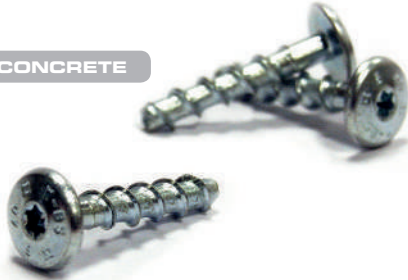
Anchor Calculation Software  
Available to download or use online:  
[www.SPIT.com/i-expert](http://www.SPIT.com/i-expert)



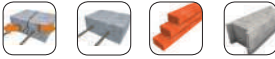
## TAPCON DOME

High performance low profile concrete screw anchor ideal for installing channel systems

### CONCRETE

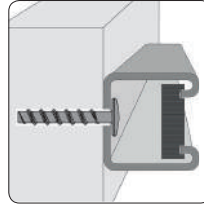


### Materials



### Features and Benefits

- Large diameter 17mm head to cover the channel systems slot
- ETA Option 1 approved anchor for cracked & non-cracked concrete
- Fire rated up to 2 hours
- New patented thread design provides easy setting and increased loads
- Low profile dome allows for channel nut to move with the channel when fixed
- Torx drive for easy installation between channel walls



### Applications

- MEP
- Signage and lighting
- HVAC
- Fire protection
- Channel
- Ventilation rails
- Suspended ceiling
- Window brackets
- Metal connectors

### Approvals



ETAG 001-3  
16/0276



ETAG 001-6  
16/0373  
(S160 only)

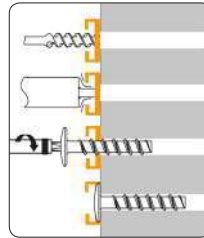


R120 Fire  
Resistance



Certified Cracked  
& Non-Cracked  
Concrete

### Installation



### Product Range

TAPCON DOME CONCRETE SCREW (LOW PROFILE)  
ZINC PLATED

Head Type: Low Profile



Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Clearance Ø (mm)	Head width (mm)	Recess size	Box Qty	Code
6X40/5	40	6	40	5	8	17	TX 30	100	058783
6X60/5.25	60	6	40	25	8	17	TX 30	100	058784

**Anchor Calculation Software**  
Available to download or use online:  
[www.SPIT.com/i-expert](http://www.SPIT.com/i-expert)

Concrete
  Steel
  Multi-Material
  Masonry
  Plasterboard



## TAPCON DOME CONCRETE SCREW (LOW PROFILE)

Low profile concrete screw anchor, ideal for applications where shallow embedment is required to avoid reinforcement

### CONCRETE



### Materials



### Features and Benefits

- ETAG part 6 approved anchor for cracked & non-cracked concrete
- Fire rated
- Shallow embedment to avoid rebar
- Low profile dome aesthetic finish
- New patented thread design provides easy setting
- Removable
- Small drill hole

### Product Range

TAPCON DOME CONCRETE SCREW (LOW PROFILE)  
ZINC PLATED

Head Type: Low Profile



Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Clearance Ø (mm)	Head width (mm)	Recess size	Box Qty	Code
6X28/5	28	6	28	3	7	14	TX 30	100	058787



### Applications

- MEP
- Signage and Lighting
- HVAC
- Suspended and MF Ceilings
- Metal connectors and brackets

### Approvals



ETAG 001-6  
17/0174

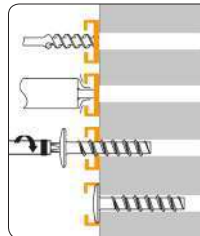


R120 Fire  
Resistance



Certified Cracked  
& Non-Cracked  
Concrete

### Installation



Use of an impact wrench not allowed; for installation with electrical screwdriver note installation torque.

The anchor is installed when the head of the anchor is supporting the fixture and further turning of the anchor is not possible.

**Anchor Calculation Software**  
Available to download or use online:  
[www.SPIT.com/i-expert](http://www.SPIT.com/i-expert)



## TAPCON BLUE

High performance concrete anchor that cuts its own thread

### CONCRETE

Tapcon®  
Hex Head



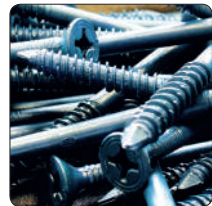
Tapcon®  
Countersunk

### Materials



### Applications

- Steel framing systems
- Railings, hand rails
- Insulation systems to masonry
- Brackets and signs
- Temp safety rails
- Cable tray, channel
- Suspended ceilings
- Back boxes
- Cable cleats
- Ductwork
- Wood battens
- Formwork
- Plywood boards
- Conduits



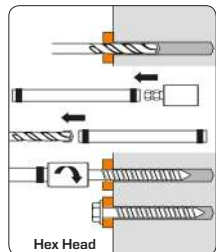
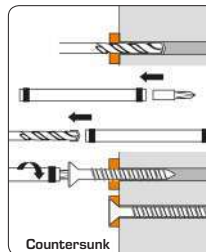
### Approvals



### Features and Benefits

- ETA Approved for cracked & non-cracked concrete
- Fast & easy setting saves time
- Removable anchor allows for temporary fixings
- Small drilling diameters
- No expansion allows close edge fixing or close fixing to each other
- High loads with small diameters

### Installation



## Product Range

### TAPCON CSK BLUE

Head Type: Countersunk



Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Clearance Ø (mm)	Box Qty	Code
5mm x 32mm	32	4	35	7	6	100	921507
5mm x 45mm	45	4	35	20	6	100	921508
5mm x 70mm	70	4	35	45	6	100	921510
5mm x 82mm	82	4	35	57	6	100	921511
6mm x 45mm	45	5	35	20	7	100	921514
6mm x 57mm	57	5	35	32	7	100	921515
6mm x 70mm	70	5	35	45	7	100	921516
6mm x 100mm	100	5	35	75	7	100	921518
6mm x 125mm	125	5	35	100	7	100	921519

### TAPCON HEX HEAD BLUE

Head Type: Hex Head



Description	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Wrench size	Clearance Ø (mm)	Box Qty	Code
5mm x 32mm	32	4	35	7	6,5	6	100	921498
5mm x 45mm	45	4	35	20	6,5	6	100	921499
5mm x 57mm	57	4	35	32	6,5	6	100	921500
6mm x 32mm	32	5	35	7	8	7	100	921501
6mm x 45mm	45	5	35	20	8	7	100	921502
6mm x 57mm	57	5	35	32	8	7	100	921503
6mm x 70mm	70	5	35	45	8	7	100	921504
6mm x 82mm	82	5	35	57	8	7	100	921505
6mm x 100mm	100	5	35	75	8	7	100	921506

### THREADED ROD HANGER CLIP (TRH)



Description	Box Qty	Code
M6 - M8 Threaded Rod Hanger	100	011430 *

\* Only use with mechanical fixings.

## Accessories

### Accessories for Tapcon® Countersunk & Hex Head

Description	Box Qty	Code
Condrive Sleeve for SDS	1	921437
Condrive Drill Driver Installation Kit	1	*921159
Drill Drive Adaptor for Condrive Sleeve	1	921160

\* Kit includes: Condrive Sleeve, Phillips Drive Adaptor, Phillips N° 2 Drive Bit, Phillips N° 3 Drive Bit, 6.5mm Hex Socket, 8mm Hex Sockets, Drill Bit Holder, Hex Key, 4 x 110mm Drill Bit and 5 x 110mm Drill Bit.

### Accessories for Tapcon® Hex Head

Description	Box Qty	Code
6.5mm Torque Control Hex Socket	1	921162
8mm Torque Control Hex Socket	1	921163

### SDS+ Drill Bits for use with Condrive Sleeve

Description	Box Qty	Code
6mm x 180mm	1	920940
4mm x 180mm	1	921137
5mm x 180mm	1	921154

## GRIP & GRIP LIP

ETA approved internally threaded anchor with or without lip

### CONCRETE



### Materials



### Applications

- Pipes
- Cable trays
- Suspended ceiling
- Hand rails
- Stadium seating
- Mechanical and electrical services
- Push pull bars
- Sprinkler systems

### Features and Benefits

- ETA Option 7 for use in non-cracked concrete
- Short embedment depth avoiding rebar contact
- Fire rated for fire resistance
- Flexible fixture thickness
- Lip version for easy setting
- Stainless steel version for outdoor use or high corrosion environments



### Approvals



ETA Option 7  
nr 05/0353

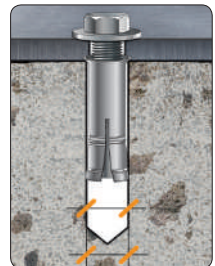
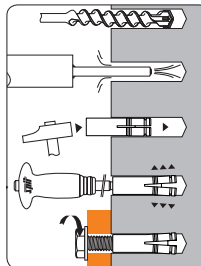


R120 Fire  
Resistance



FM  
Approved

### Installation

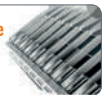


Use correct SPIT setting tool only



**i-EXPERT**  
by SPIT

Anchor Calculation Software  
Available to download or use online:  
[www.SPIT.com/i-expert](http://www.SPIT.com/i-expert)





## Product Range

### GRIP LIP ZINC PLATED



Description	Anchor thread Ø	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Clearance Ø (mm)	Box Qty	Code	ST-M Manual Setting Tool		ST-RH Rotary Hammer Setting Tool		
								Image	Code	Image	Code	
M6 x 30mm Lip ZP	M6	30	8	32	7	100	050789		M6 x 30mm	050922	-	-
M8 x 30mm Lip ZP	M8	30	10	33	9	100	050790		M8 x 30mm	050923	M8 x 30mm	050929
M10 x 30mm Lip ZP	M10	30	12	43	12	100	050799		M10 x 30mm	051015	-	-
M10 x 40mm Lip ZP	M10	40	12	43	12	100	050791		M10 x 40mm	050924	M10 x 40mm	050930
M12 x 50mm Lip ZP	M12	50	12	54	14	50	050792		M12 x 50mm	050925	-	-
M16 x 65mm Lip ZP	M16	65	20	70	18	20	050793		M16 x 65mm	050926	-	-

### GRIP ZINC PLATED



Description	Anchor thread Ø	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Clearance Ø (mm)	Box Qty	Code	ST-M Manual Setting Tool		ST-RH Rotary Hammer Setting Tool		
								Image	Code	Image	Code	
M6x30 ZP	M6	30	8	32	7	100	062040		M6 x 30mm	050922	-	-
M8x30 ZP	M8	30	10	33	9	100	062050		M8 x 30mm	050923	M8 x 30mm	050930
M10x40 ZP	M10	40	12	43	12	100	062060		M10 x 40mm	050924	M10 x 40mm	050930
M12x50 ZP	M12	50	15	54	14	50	062070		M12 x 50mm	050925	-	-
M16x65 ZP	M16	65	20	70	18	20	062080		M16 x 65mm	050923	-	-

### GRIP A4 STAINLESS STEEL



Description	Anchor thread Ø	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Clearance Ø (mm)	Box Qty	Code	Stainless Steel Setting Tool		
								Image	Code	
M6 x 30mm SS A4	M6	30	8	32	7	100	062240		M6 x 30mm	050214
M8 x 30mm SS A4	M8	30	10	33	9	100	062250		M8 x 30mm	050215
M10 x 40mm SS A4	M10	40	12	43	12	50	062260		M10 x 30mm	050216
M12 x 50mm SS A4	M12	50	15	54	14	50	062270		M12 x 50mm	050217
M16 x 65mm SS A4	M16	65	20	70	18	25	062280		M16 x 65mm	050218



## UDZ 6

ETA Approved, simple to install ceiling anchor

### CONCRETE



### Materials



C20 TO C25

### Features and Benefits

- ETA approved for cracked and non-cracked concrete
- Quick installation with a hammer
- Large head diameter ideal for fixing metal profiles
- Fire resistance
- Secured via expansion barb: prevents the anchor from falling out
- No tightening torque required: expands automatically under load



### Applications

- Metal profiles
- Ceiling
- Fire protection boards
- Chains
- Drywall tracks
- Pipes
- Clamps

### Approvals

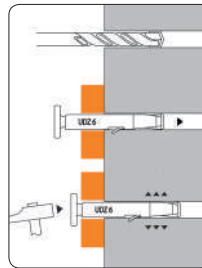


ETAG 001-6  
nr 05/0038



R120 Fire  
Resistance

### Installation



### Product Range

#### UDZ 6



Description	Ø (mm)	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Max. fixing thickness (mm)	Min. thickness base material	Embedment depth	Clearance Ø (mm)	Box Qty	Code
6 x 35/5mm	6	40	6	50	5	80	30	7	100	060084

## RAMSET WIRE HANGER

Assisted suspension anchor ideal for fixing suspended ceilings or supporting wires

CONCRETE



### Materials



### Features and Benefits

- Wide eye for an easier installation of lightweight cabling and lighting applications
- Quick installation with a hammer
- 100% metal anchor

### Product Range

#### RAMSET WIRE HANGER



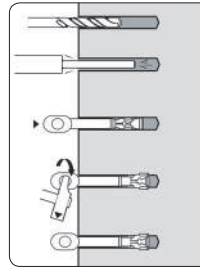
Description	Ø (mm)	Anchor length (mm)	Drill hole Ø (mm)	Min. drilling depth (mm)	Min. thickness base material	Box Qty	Code
6 x 60mm	6	60	8	25	40	100	922781



### Applications

- Fixing cables for suspended ceilings
- Lighting
- Signage

### Installation



After inserting into the hole, a swift tug with a claw hammer sets the anchor. Under loading, the expansion cone draws into the expansion sleeve ensuring a secure fix.

# SPIT Mechanical Anchors

## Different Types of Anchor

### Torque Controlled Anchors

Expansion is achieved by the application of torque to a bolt or nut which causes a cone to be drawn into a sleeve. Anchorage is verified with this torque eg. SPIT Fix II etc

### Hammer Set Expansion Anchors (cone)

Expansion is achieved by hammering a component (normally a cone) which is captive in the body of the anchor. Anchorage is verified by the travel of the expansion component. eg. SPIT Drop-in, SPIT Grip Lip.

### Chemical Anchors

The anchor consists of a fixing element and a synthetic-based mortar. The two components are placed in the hole and after curing the mortar creates dual adhesion, one between the fixing element and the mortar and the other between the mortar and base material. The mortar is supplied either in a glass capsule or an injection cartridge. Chemical anchors generate lower stresses in the base material so they can be used closer to edges and closer together. eg. SPIT Maxima, SPIT Epcon, SPIT Epomax, Epobar, SPIT C Mix Plus.

### Friction Based Light Duty Anchors

Performance is achieved by the introduction of an expansion component which is screwed or hammered into the anchor body. The anchor body is thus firmly blocked against the sides of the drilled hole. eg. SPIT Hit M, SPIT CL35, SPIT ISO.

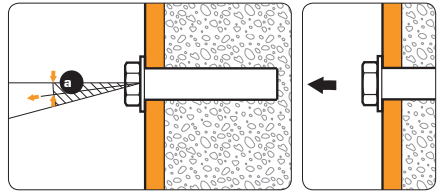
### Deformation Based Light Duty Anchors

The anchor body is drawn against the interior of the base material by deformation eg. SPIT Hollow Wall Anchor.

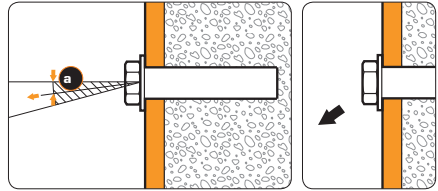
### Tapcon Self Tapping Screwed Anchors

The anchor is rotated into a (pre-drilled) hole, cutting its own thread and 'self tapping' into the substrate.

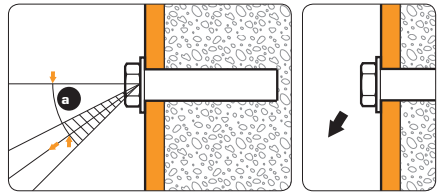
## Load Directions - Tensile ( $0^\circ \leq a \leq 15^\circ$ )



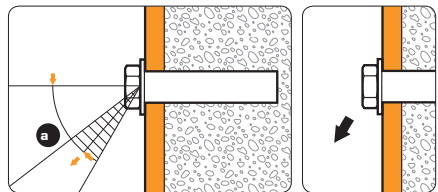
## Oblique 30° ( $15^\circ \leq a \leq 37.5^\circ$ )



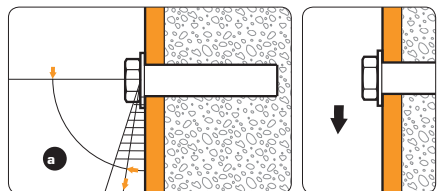
## Oblique 45° ( $37.5^\circ \leq a \leq 52.5^\circ$ )



## Oblique 60° ( $52.5^\circ \leq a \leq 67.5^\circ$ )



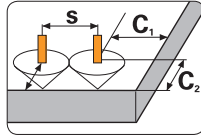
## Shear ( $67.5^\circ \leq a \leq 90^\circ$ )



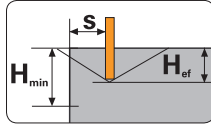
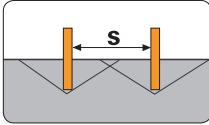
## Anchor Spacing

Taking into account the stress values created by the expansion anchors and the loads they are designed to support, the following points must be respected when establishing the performance of each individual product (recommended load):

- The minimum thickness of the base material ( $H_{min}$ ) (determined by anchor depth  $H_{ef}$ )
- The minimum distance between anchors ( $S$ )
- The distance of anchors from edges of the slab or structure



The coincidence of stress cones of adjacent anchors in concrete reduces their tensile performance.

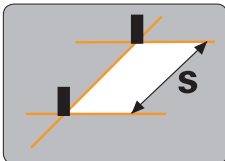


### Anchor Depth: $H_{ef}$

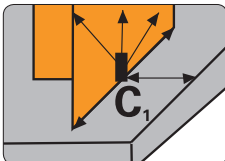
Each anchor has a minimum anchorage depth which guarantees its safe working load (recommended load). Certain anchor types can be embedded deeper with a resulting increase in performance (in particular SPIT FIX3). For further information call the Technical Help Line.

### Reduced Distance Between Anchors

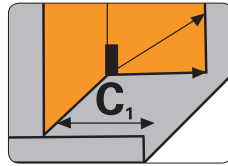
The distance between anchors from edges and corners can also be reduced in some cases. Such reduction will affect the recommended load of the anchor and one or more reduction coefficients will have to be applied.



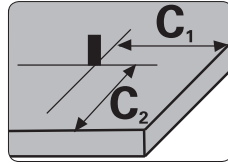
A reduction coefficient related to distance between anchors  $S_{15}$



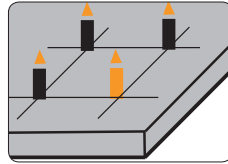
A reduction coefficient related to edge distance  $C_1$  with no load transmitted towards the free edge



A reduction coefficient related to edge distance  $C_1$  with load transmitted towards the free edge

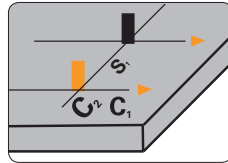


In some cases two reduction coefficient, related to the distance from the corner of a slab  $C_1, C_2$



### Tensile Load

In the case of a group of anchors it is necessary to consider the worst placed anchor



### Shear Load

In the case of a group of anchors it is necessary to consider the worst placed anchor

## Load Classification

### Static Loads

A load is static when it's constant and does not change over time.

### Vibrating Load

A variable load of low amplitude with a high frequency (motor vibration for example).

### Dynamic Load

A variable load in time with a medium or high amplitude with or without negative loading (wind for example).

### Shock Load

Load applied in a very short period of time.

These four load types can be occasional or permanent. An occasional load is applied during a limited period of time and several times. A permanent load is applied continuously.



# ITW Construction Products

## - Terms & Conditions

### 1. GENERAL

1.1 In these conditions the following words have the meanings shown:

"Buyer"	means the person, firm or company purchasing Goods
"Company"	means ITW Ltd T/A ITW Construction Products
"Contract"	means the agreement between the Company and the Buyer for the purchase from the Company by the Buyer of Goods
"Contracts"	includes all agreements between the Company and the Buyer for the purchase of Goods from the Company by the Buyer
"Goods"	means the goods manufactured by the Company and purchased by the Buyer on the terms of this Contract

1.2 Unless agreed otherwise, these conditions shall be incorporated in all Contracts of the Company to sell Goods and shall be the sole conditions under which the sale takes place. All other terms, conditions or other representations are excluded from the Contracts between the Buyer and the Company including any terms and conditions which the Buyer may purport to apply under any order for Goods. In the absence of such acceptance the Buyer shall be deemed to have withdrawn or waived his said conditions or stipulations and to contract solely on the basis of these terms.

1.3 These conditions shall prevail unless expressly varied in writing and signed by the General Manager on behalf of the Company.

1.4 No statement, description, information, warranty, condition or recommendation contained in any catalogue, price list, advertisement or communication or made verbally by any of the agents or employees of the Company shall be construed to vary in any way any of the conditions under this Contract unless otherwise agreed in accordance with Clause 1.3 above.

1.5 Any written quotation, estimate and/or advertised price for the Goods shall be an invitation to treat and no binding contract shall be created by placing an order until the Company has acknowledged the order to the Buyer in writing.

### 2. DELIVERY

2.1 Where the Company agrees to arrange carriage of the Goods from the Company's works to another location specified by the Buyer, it shall do so as the Buyer's agent and risk (but not title) to the Goods shall pass on the Goods being collected by the carrier. The Company may arrange carriage at the cost of the Buyer in such manner as it considers appropriate. Times for delivery are (unless otherwise expressly agreed in writing) estimates only and time shall not be of the essence of the contract.

2.2 Proof of delivery of Goods is available from our Customer Services Department for a period of 28 days from date of invoice. If a proof of delivery is requested more than 28 days after the date of invoice or requested again after the Company has supplied such proof of delivery, the Company shall be under no obligation to provide such proof of delivery.

2.3 Where the Company effects insurance over the Goods during transit, it shall do so as the Buyer's agent and at the Buyer's expense and such insurance shall (subject to any written instruction by the Buyer to the Company prior to the Goods leaving the Company's works) be in such amounts, against such risks, with such insurers and for such periods as the Company considers appropriate. The proceeds of any such insurance shall be held in trust for the Company until all sums then remaining unpaid to the Company in respect of the Goods are made in full. The Company and the Buyer will on request give to each other all information with regard to insurances as may be reasonably required to protect their respective interests in the Goods under this clause.

2.4 The Buyer shall upon delivery of the Goods examine the Goods and shall promptly notify the Company, and the carrier where relevant, of any damage, defect or shortage reasonably apparent to the Buyer on reasonable examination of the Goods. Claims in respect of any of damage, defect or shortage must be made within 5 days following delivery of the Goods.

2.5 Should the Company be prevented for any reason set out in clause 6 from delivering all of the Goods ordered by the Buyer, the Company shall deliver and the Buyer shall take such Goods as the Company shall be able to deliver and the Buyer shall be entitled to the same prices and discounts on such part of the Goods as are actually delivered to it as were chargeable on the whole order.

2.6 Each order for Goods subject to these Terms shall be a separate contract and the failure of any delivery in respect to one order shall not breach the contracts as to any other orders.

2.7 In the event of the Buyer failing to take delivery of the Goods within 14 days of their becoming available, the Company shall be free to store the Goods at the risk and expense of the Buyer and/or to re-sell any of them without prejudice to the Company's rights and remedies against the Buyer.

### 3. RETURN OF GOODS

3.1 Goods which are not defective and which have been supplied in accordance with the contract cannot be returned without the Company's prior written authorization in the form of an official company returns number ("Authorized Returns"). Authorized Returns can be subject to a handling charge of 20% of the invoice value of the Authorized Returns or £35.00 (whichever is the greater). Authorized Returns shall be delivered to the Company's premises at the Buyer's expense.

3.2 The Company will only authorize the return of Goods if the Buyer notifies the Company of its wish to return the Goods within 14 days of delivery of the Goods, unless agreed otherwise.

3.3 Goods returned to the Company must be in a sufficiently good condition to allow them to be resold by the Company and in original packs. Goods not in a re-saleable condition will not be authorized for return.

3.4 Goods which incorporate Gas Fuel Cells will only be authorized for return if they comply with Clause [3.3] above and if there is minimum of 6 months shelf life remaining.

3.5 Goods which are not standard or which have been modified or made to the Buyer's specifications will not be authorized for return.

### 4. RETENTION OF TITLE

4.1 Title to the Goods shall not pass to the Buyer until the purchase price and any VAT thereon shall have been paid in full to the Company. Until such payment in full the Buyer shall not be entitled to sell, transfer, lease, charge, assign by way of security or otherwise deal in or encumber the Goods and the relationship between the Company and the Buyer in respect of the Goods including any proceeds of sale or other consideration therefore shall be a fiduciary one.

4.2 If in breach of Clause 4.1 above the Buyer sells the Goods prior to making payment in full then any proceeds of sale in respect thereof and all rights arising under or in respect of the said sale shall be held (in the case of the proceeds of sale in a separate account) by the Buyer as trustee for the Company.

4.3 If the Buyer fails to make payment in full of all sums due hereunder by the due date or prior to such payment the Buyer convenes a meeting of its creditors or a proposal is made for a voluntary arrangement within the meaning of Part 1 of the Insolvency Act 1986 or a proposal for any other composition scheme or arrangement with (or assignment for the benefit of) the Buyer's creditors or if the Buyer is unable to pay its debt within the meaning of section 123 of the Insolvency Act 1986 or if a trustee, receiver, administrative receiver or similar officer is appointed in respect of all or any part of the business or assets of the Buyer or if a meeting is convened for the purpose of considering a resolution or other steps are taken for the winding up of the Buyer or the making of an administration order (otherwise than for the purpose of an amalgamation or reconstruction) then the Company (without prejudice to any other legal remedies it may have) shall at any time thereafter be entitled to enter upon the Buyer's premises without notice and remove the Goods or otherwise exercise the rights set out in clause 5.5.1, 5.5.2 and 5.5.3.

### 5. PRICES AND PAYMENT

5.1 Prices given in quotations or when accepting orders or at any time are subject to variation and any order accepted shall be subject to the express condition that prices supplied on the Company's order acknowledgement shall apply. In all quotations, offers, orders or contracts with the Company (unless otherwise stated) all the Company's prices are exclusive of value added tax and the amount of value added tax (if any) shall be deemed added to any price so quoted and be payable by the Buyer.

5.2 For Goods sold within the United Kingdom, payment shall be strictly net and shall be made in full on or before the last day of the month following date of invoice (unless otherwise agreed in writing by the Company).

5.3 For Goods sold outside the United Kingdom, payment shall be strictly net and shall be made in cash in full, on or before the last day of the month following date of invoice (unless otherwise agreed in writing by the Company). For the purpose of this clause 4.3 time shall be deemed to be of the essence of the contract.

5.4 Payment of the price or any part thereof from time to time outstanding (with interest as provided in clause 5.5) may if so required by the Company and without prejudice to clauses 4.1 and 4.2, above be secured and/or effected by means (at the Company's option) of (i) irrevocable Letters of Credit which have been confirmed by a Bank in London nominated or approved by the Company and valid for a period specified by the Company; or (ii) Bills of Exchange drawn in favour of the Company and accepted by a Bank or Confirming House in London nominated or approved by and payable at delivery or at such other date or dates (if any) as may be stipulated by the Company. Such letters or (as the case may be) Bills shall be transmitted to the Company on or prior to commencement of delivery of the Goods and shall be renewed or extended as required to ensure their continuing validity notwithstanding any delay (howsoever arising) in delivery of such Goods. Upon any default in payment upon or in respect of any such Letters or Bills the whole balance then remaining due to the Company shall forthwith become payable upon demand.

5.5 In the event of any default by the Buyer in making payment of any amount payable to the Company under any contract with the Company or any payment not being received when due the Company may at its option and without prejudice to its other right:

5.5.1 Suspend or cancel further deliveries under any Contract with the Buyer and/or resell the Goods, and/or

5.5.2 Charge interest (whether before or after judgment) at a rate of 8 per cent per annum above the Base Rate from time to time of the Company's principal bankers in England on the amount at any time outstanding from a commencement of delivery of the Goods to which the amount relates until receipt of actual payment.

5.5.3 Under "The Late Payment of Commercial Debts (Interest) Act: 1998" the Company will claim compensation for the costs of collecting late payments at the following rate:

Amount Owed	Compensation
Up to £999.99	£40.00
Up to £9,999.99	£70.00
Over £10,000.00	£100.00

## 6. DEFAULT OR INSOLVENCY OF BUYER

6.1 In the event that:

6.1.1 the Buyer shall be in breach of any of its obligations under the Contract;

6.1.2 any distress or execution shall be levied on the Buyer's property or assets;

6.1.3 if the Buyer (being an individual or partnership) shall make or offer to make any voluntary arrangement or composition with its creditors or become bankrupt or if any bankruptcy petition be presented against him;

6.1.4 (if the Buyer is a company) has an administrative receiver or administrator appointed or makes a voluntary arrangement with its creditors or commences to be wound up; or

6.1.5 otherwise if the Buyer fails to pay its debts as and when they fall due; or

6.1.6 such equivalent event in Clauses 6.1.1 to Clause 6.1.5 occurs to the Buyer in its legal jurisdiction, the Company at its discretion and without prejudice to any other right or claim may by notice in writing forthwith determine wholly or in part any and all the other Contracts between the Company and the Buyer or may (without prejudice to the Company's rights subsequently to determine the Contract for the same cause should it so decide) by notice in writing suspend further deliveries of Goods.

## 7. DATA PROTECTION ACT 1998

7.1 The Company shall comply with the provisions of the Data Protection Act: 1998, and the European Communities (Data Protection) Regulations 2001, as may be amended from time to time and all other applicable data protection legislation in relation to the processing of any personal data it obtains from the Buyer. The Company shall comply with its on-line Privacy Policy when the Buyer purchases the Goods from the Company through the Company's website.

7.2 The Company may process all the details it obtains from the Buyer to enable the Company to do business with the Buyer and for the specific purpose of selling the Goods to the Buyer. The Company may also request further information from third parties with the Buyer's consent for example, credit reference agencies. The Company shall obtain specific consent from the Buyer for the collection by the Company of sensitive data as defined by the Act such as racial origin, [trade union membership and commission of offences] physical or mental health or criminal convictions.

7.3 Any information gathered will only be used in the context of the business the Company conducts for the Buyer and for any other purpose required for the fair processing of the Buyer's data. The Buyer may notify the Company to cease processing the data if it is unhappy with the way the Company uses the Buyer's personal data or wishes the Company to cease using any data which the Buyer has voluntarily given to the Company.

7.4 The Company may disclose the Buyer's personal data as required by law, including but without limitation, to prevent a crime, discharge a statutory duty or as required by a court order in the context of legal proceedings or to any third parties who process personal data on the Company's behalf, such as computer maintenance companies and any group company within the Company's organisation.

## 8. WARRANTIES and REPRESENTATIONS

8.1 The Company warrants that for a period of 6 months from the date of delivery to the common carrier (the "Warranty Period"), under normal use and given proper installation and maintenance as determined by the Company, the Goods:

(a) will conform to mutually agreed upon written specifications or other descriptions; and

(b) will be free from substantial defects in material and workmanship. In the event of a breach of the warranties set forth above (the "Warranties"), Company's sole liability and Buyer's sole remedy will be (at Company's option), for Company to repair, replace or credit Buyer's account for, any Goods that fails to conform to the Warranties, provided that:

(i) during the Warranty Period Company is promptly notified in writing upon discovery of such failure with a detailed explanation of any alleged deficiencies;

(ii) Company is given a reasonable opportunity to investigate all claims; and a deficiencies and that the deficiencies were not caused by accident, misuse, neglect, alteration, improper installment, unauthorized alteration or repair or improper testing. No Products may be returned to Company until inspection and approval by Company.

8.2 All Goods are sold with the benefit of and subject to the conditions of the warranty supplied with them, which is available for inspection on request.

8.3 Nothing herein or in any warranty given by the Company shall impose any liability upon the Company in respect of any defect in the Goods arising out of the acts, omissions, negligence or default of the Buyer, its servants and agents including without limitation any failure by the Buyer to comply with any recommendations of the Company as to storage and handling or use or servicing of the Goods, use of the Goods with other goods or other misuse of the Goods or accident or fair wear and tear of the Goods.

8.4 Except as provided for in these conditions, any warranties, (whether express or implied by statute or common law or otherwise) including without limitation those of satisfactory or merchantable quality or of fitness for a particular purpose (even if that purpose is made known expressly or by implication of the Company) are hereby excluded.

8.5 No warranty is given that the detail in illustrations and in data supplied as to weights and measurement are accurate unless they are specifically described so to be and they are otherwise provided by way of identification of the Goods only. Defects in quality and dimension where specifically mentioned shall be deemed accepted by the Buyer. In the case of Goods sold by samples as well as by description it shall be sufficient that the bulk of the Goods correspond with the sample without also corresponding with the description. The Company reserves the right to modify the manufacture of any Goods at any time and this condition shall be held to be implicit in all quotations or communications sent out by the Company.

8.6 The Buyer acknowledges and agrees that all contracts are entered into by the Company on the basis that [unless otherwise expressly agreed in writing at the time of concluding the contract] the Buyer is not placing reliance on any representation made by the Company or by its servants or agents as to the fitness, suitability, description, design, specification or quality of the Goods and or services to be supplied by the Company, thereunder.

8.7 The Company gives no guarantee to any parts of the Goods which are not manufactured by the Company but the Company so far as possible will pass on to the Buyer any benefit received by the Company under a guarantee or warranty from the manufacturer of such parts.

## 9. FORCE MAJEURE

9.1 The Company shall have no liability under the Contract in respect of any failure or delay in fulfilling any of the Company's obligation to the extent that fulfillment thereof is prevented, frustrated, impeded or delayed as a consequence of any "force majeure" or any occurrence whatsoever beyond the control of the Company including without prejudice to the generality of the foregoing:

9.1.1 compliance with any order, regulation, request or control of any national or local authority, governmental department or other competent authority of any country; or

9.1.2 any delays in or cancellations of deliveries or provision of services by third parties or shortages of goods, materials or parts; or

9.1.3 any strikes, lock-outs or trade disputes whether involving the Company employees or others, fire, explosion, accident, calamity or civil disturbance, action of elements, national calamity or Act of God; or

9.1.4 failure in whole (or in part) of any power of energy supply.

**9. FORCE MAJEURE continued...**

9.2 Whilst the Company undertakes to make reasonable endeavours within its power to overcome difficulties arising in connection with any of the events or circumstances referred to in sub-clause [9.1] of this condition, the Company reserves the right to terminate the Contract with the Buyer without incurring any liability whatsoever and in particular the Company shall not be obliged to purchase any goods from third parties to make good any such difficulty.

**10. LIABILITY**

10.1 Notwithstanding anything contrary, the Company's liability to any user for personal injury or death caused by its negligence or fraud is not limited.

10.2 The Company shall not be liable (whether or not the Company has been advised of the possibility of such loss) in contract, tort, negligence or otherwise howsoever arising for any claim, damage, loss or costs in respect of:

10.2.1 any losses special to the Buyer, any direct loss of profits, any direct loss of turnover and/or any direct loss of revenue; and

10.2.2 any indirect or consequential loss or damage howsoever caused including without limitation any losses special to the Buyer, any loss of profits, loss of turnover, loss of revenue, loss of business and/or loss of data and for the avoidance of doubt, the sub-clauses in this Clause 10.2 are intended and agreed by the Buyer to be severable.

10.3 Subject to Clause 10.1, the aggregate liability of the Company (whether in contract, tort, negligence or breach of statutory duty or otherwise) to the Buyer for any loss or damage shall be limited to the price of the Goods.

10.4 The Buyer shall be liable for and shall indemnify the Company against any and all expenses, loss, liability or proceedings suffered by a third party arising as a result of or in connection with any act, omission, negligence, and/or breach of the terms of this Contract or otherwise through the default of the Buyer.

10.5 The Company makes no representation or warranty that the use of the Goods does not infringe the rights of any third party and the Company accepts no liability in this respect.

**11. CONFIDENTIALITY**

The Buyer shall during and after the termination of the Contract keep confidential all information, written estimates, plans and illustrations, proposals and all other quotation documentation acquired from the Company or which becomes known to the Buyer in connection with the Contract. Such documentation shall always remain the property of the Company and must be produced to the Company on demand.

**12. SALE PROMOTION DOCUMENTATION**

Whilst the Company takes every precaution in the preparation of its catalogues, technical circulars, illustrations, price lists, weight and measurement estimates and its other literature, these documents are for the Buyer's general guidance only and the particulars contained therein shall not constitute representations by the Company and the Company shall not be bound thereby. The Company reserves the right to vary the design, materials and the specifications of the Goods without prior notice.

**13. GOVERNING LAW AND JURISDICTION**

The Contract shall be governed by and construed in all respects in accordance with English law and all disputes shall be submitted to the jurisdiction of the English Courts.

**14. BERR - WEEE REGULATIONS**

Please take this as confirmation that ITW Construction Products UK are passing on the obligation for financing the cost of the collection, treatment, recovery and environmentally sound disposal of any Business to Business electrical items we supply to your company. This is in accordance with The Waste Electrical and Electronic Equipment (Amendment) Regulations 2009. Please see our website [www.itwcp.co.uk](http://www.itwcp.co.uk) for further information

**15. STORAGE**

If by reason of instructions or lack of instructions from the Buyer, despatch of the Goods in accordance with the contract is delayed for 14 days after the Buyer has been notified that the Goods are ready for despatch, the property in the Goods shall pass to the Buyer who shall take delivery or arrange for storage and for the purposes of clause [payment] the Goods shall thereupon be deemed to have been delivered. If and for so long as the Company's storage facilities permit, the Company shall store the Goods and the Buyer shall pay storage charges as notified to the Buyer by the Company.

**16. PATENTS AND TRADEMARKS**

No representation, warranty or indemnity is given by Company that the Goods do not infringe any letters, patent, trade marks, registered designs or other industrial rights.

**17. ASSIGNABILITY**

The Contract of which these Conditions form part is personal to the Buyer who shall not assign the benefit thereof without the Company's written consent.

**18. WAIVER**

The waiver by the Company of any breach of any terms herein shall not prevent the subsequent enforcement of that term and shall not be deemed a waiver of any subsequent breach.

**19. PARTIAL VALIDITY**

If at any time any provision hereof is or becomes illegal, invalid or unenforceable in any respect, the legality, validity and enforcement of the remaining provision hereof shall not in any way be affected or impaired thereby.

**20. STATUTORY AND OTHER REGULATIONS**

If the cost to the Company of performing its obligations under the Contract shall be increased or reduced by reason of making or amendment after the date of acceptance of any law or of any order, regulation or by-law having the Force of Law that shall affect the performance of the Company's obligations under the Contract, the amount of such increase shall be added to or deducted from the contract price as the case may be.



# Notes





The information in this catalogue is intended for general guidance only and is given without engagement. Additional information and advice on specific applications is available from our Technical Support Team. For this however, we require a precise description of your particular application.

All the data in this catalogue concerning work with our fixing elements must be adapted to suit local conditions and the type of materials in use.

We cannot be responsible for any errors, and we reserve the right to make technical and range modifications without notice. No liability is accepted for printing errors and omissions.

If more detailed performance specifications are required for certain articles and types, please contact our Technical Support Department for advice.

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(Distributors)

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