

# Stress corrosion cracking: the hidden danger

Installers use fasteners manufactured from stainless steel because it has a high resistance to corrosion. But certain environmental factors, such as the high levels of humidity and chlorine gas commonly found in swimming pools, can cause a type of corrosion called stress corrosion cracking (SCC) in certain grades of stainless steel, including 304 (EN1.4301) & 316 (EN1.4401) austenitic stainless.

Unlike the 'red rust' typical of carbon steel corrosion, SCC is not visible to the naked eye. This means that components can suffer sudden, unexpected failure with devastating consequences to the structural integrity of the building. As a result, there have been well documented, catastrophic instances where the load-bearing structures in swimming pools and leisure centres have collapsed without warning.

As well as the potential for injury or loss of life, this could leave the specifier and the installer liable for compensation claims and even prosecution for criminal negligence.

That's why it's important to choose a fastener that can deliver the required performance in even the toughest environments.



#### Reduce risk and ensure structural security

TapFast® TF-HCR self-tapping fasteners deliver proven resistance against SCC. They are manufactured from high-grade High Corrosion Resistant (HCR) 1.4529 stainless steel, which is an approved material according to BS EN ISO 3506-4:2009 Annex C. Fixfast HCR contains a minimum 6% Molybdenum which allows these fasteners to be used in these corrosive, aggressive environments.

As a result, TapFast® TF-HCR meets the standards set out by the NDI (Nickel Development Institute) for safety-critical fasteners in applications where stress corrosion cracking could be an issue. They're also backed up by technical design advice from Fixfast's inhouse engineers and lifetime project warranties.

So, for peace of mind, always use TapFast® TF-HCR self-tapping fasteners to prevent SCC in safety-critical structural applications.

For further guidance on fasteners used when exposed to these types of environment, please follow the link below:

▶ GD33 fasteners for metal roof and wall cladding: design, detailing and installation guide.



# Designed for extreme risk corrosivity environments

TapFast® TF-HCR self-tapping fasteners are designed to fix sheeting and cladding to timber, heavy steel and light steel, and are suitable for use in extremely high-risk environments including:

- + Swimming pools with almost permanent condensation and exposure to chlorine
- + Subtropical and tropical zones with exposure to severe humidity
- + High pollution environments such as extreme industrial areas
- + Coastal and offshore areas where there will be occasional contact with salt spray

Code	Substrate material	Length (mm)	Diameter (mm)	Drive type
TF-HCR-C-SA415-6.3 x35	Light gauge steel	35	6.3	8mm hex
TF-HCR-B-SA415-6.3x35	Heavy gauge steel	35	6.3	8mm hex
TF-HCR-A-SA415-6.3x65	Timber	65	6.3	8mm hex

Washers are available for all applications – 15mm or 19mm A4 stainless steel or aluminium washers bonded to a 3mm EPDM sealing element are recommended.

Request your free sample of our TapFast® TF-HCR fasteners now





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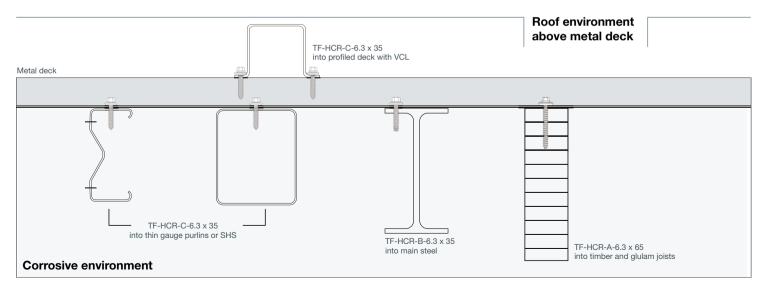


# Typical TapFast® TF-HCR applications for swimming pool roof construction

TapFast® TF-HCR self-tapping fasteners must be used for all safety-critical applications where fasteners penetrate or are installed within the corrosive environment. Where fasteners are protected from chlorine gas and other chemicals, other grades of stainless steel can be used

#### Installation guidance

For the best results, fasteners must be installed with a Fixfast approved screwgun incorporating a depth setting sleeve. This ensures they are driven to the correct depth and are not under or over-driven, which can compromise weatherproofing and thermal performance, and invalidate the warranty.



#### **SUPPORT**

If you need support, our technical team are on hand to help you with design advice, fastener selection and installation best practice.

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Certificate Number 10905 ISO 9001, ISO 14001, ISO 45001