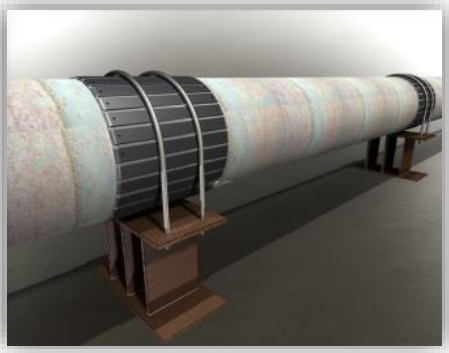
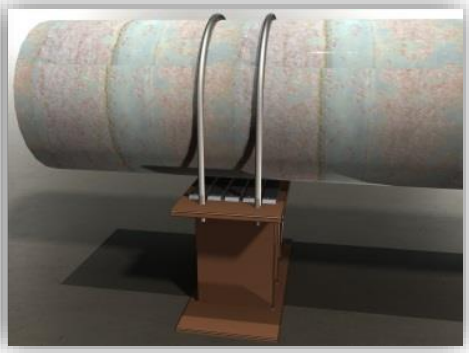
TECHNICAL DATA SHEET

ROLLERKiT® DESCRIPTION

ROLLERKiT® is a patented innovation by 3X ENGINEERING (3X). It avoids contact between pipe and trapped water on pipe support, prevents from further corrosion on support, protects the pipe section on bearing, avoids galvanic effect and protects the pipe from impacts. A single kit can repair several pipes or pipe supports, of various shapes and diameters with a long-term lifetime.

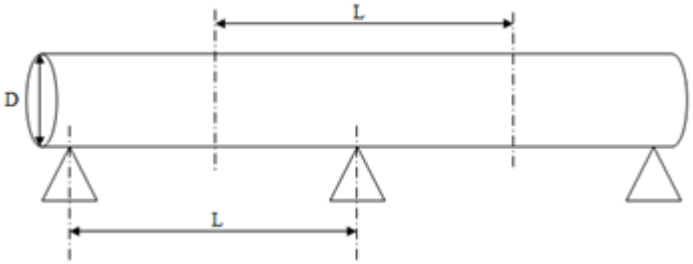
It can be used as preventive or curative repair system. Its technical characteristics also enable it to be used as an impact protection shield.

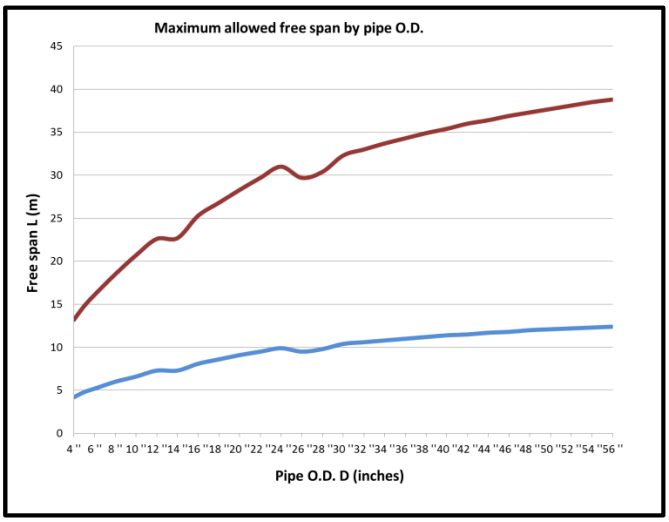




ROLLERKiT® CONCEPT

ROLLERKiT® has been engineered according to standard ASME B31.1 for the maximum free span allowed, L, but we recommend to use safety practice.

For the calculations we have considered the maximum pipe weight, 80% flooded.





ROLLERKiT® can be applied in two different configurations:

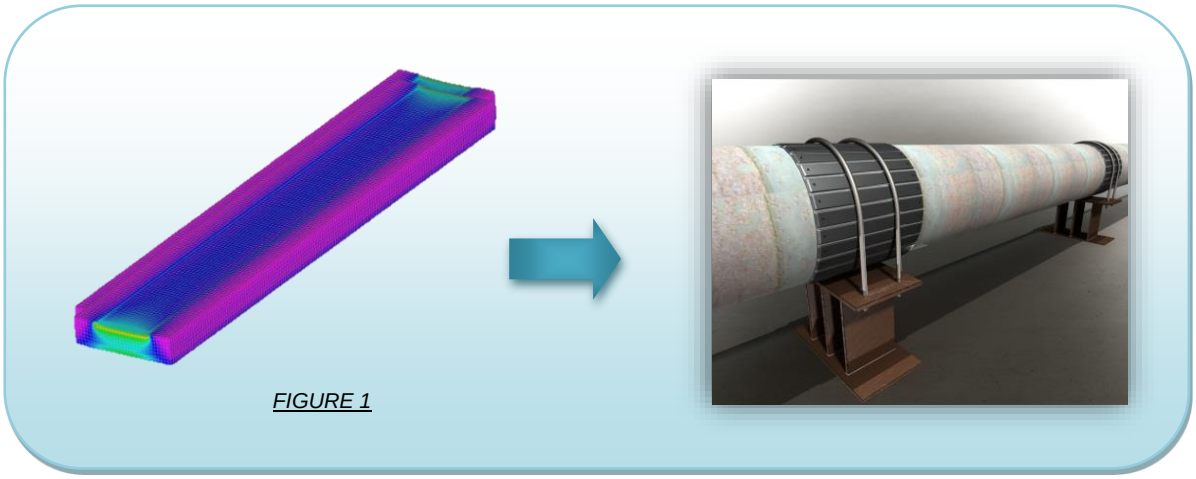


FIGURE 1

Fig. 1 illustrates the stress in the pad for ROLLERKiT® on pipe

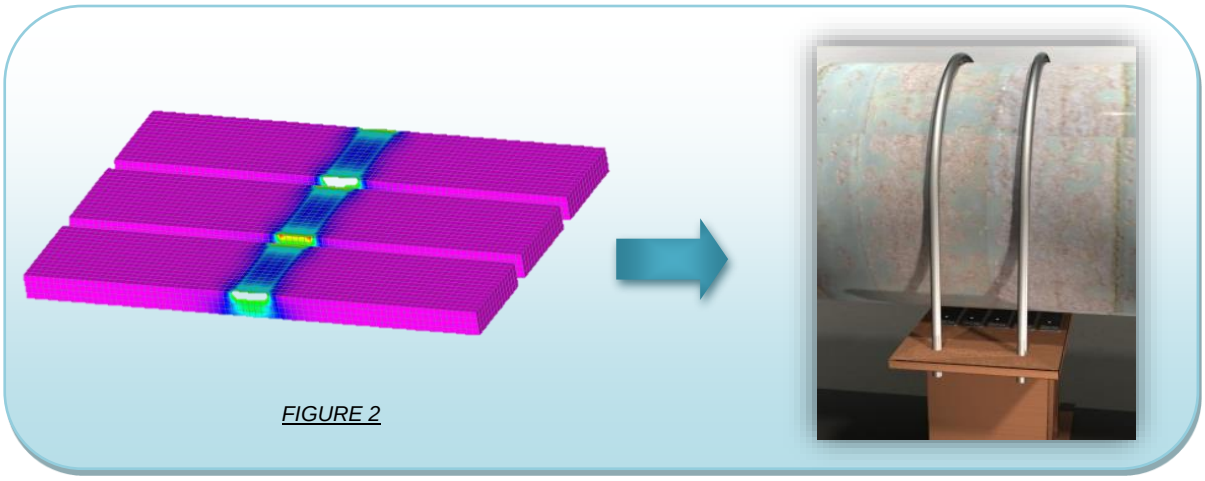


FIGURE 2

Fig. 2 illustrates the stress in the pads for ROLLERKiT® on support

ROLLERKiT® COMPONENTS

ROLLERKiT® is made of techno polymer PPS pads welded on a glass fiber fabric and an epoxy resin. The product is designed to be used for onshore application and topside of offshore platform. In case of severe environment, such as splash zone or subsea, please contact 3X Engineering to obtain suitable solution.

The techno polymer PPS pads are thermo welded on the glass fiber fabric with a laser technology. The glass fiber fabric is impregnated with PPS powder which melts during the laser welding process and fuses with the PPS from the patch. The result is a strong and homogeneous assembly of all ROLLERKiT® components.

The glass fiber fabric ensures the patches assembly and stop the corrosion when applied with the resin on a corroded surface.

Two different versions were properly designed to support weight of pipe depending on pipe diameter: 8 mm and 12 mm.
The 8mm pad thickness ROLLERKiT® can support pipes from 4” to 28”: ROL-28.
The 12mm pad thickness ROLLERKiT® can support pipes from 30” to 56”: ROL-56.

ROLLERKiT®

Solution for Corrosion Under Support
From -30°C (-22°F) to +150°C (+302°F)

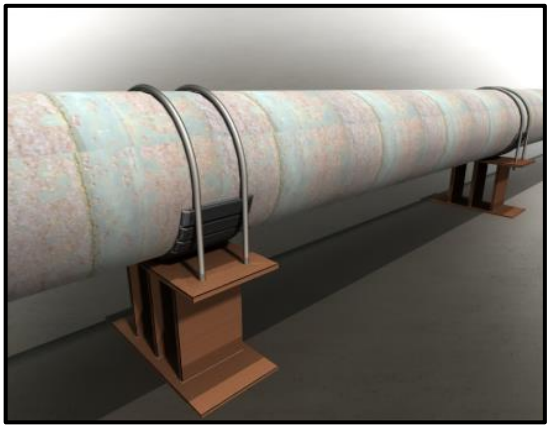
Product	Pipe O.D. (inch)	length x width x thickness (mm)
ROL-28	4" to 28 "	Roll 3000x160x8
ROL-56	30" to 56"	Roll 3000x300x12

ROLLERKiT® IMPLEMENTATION

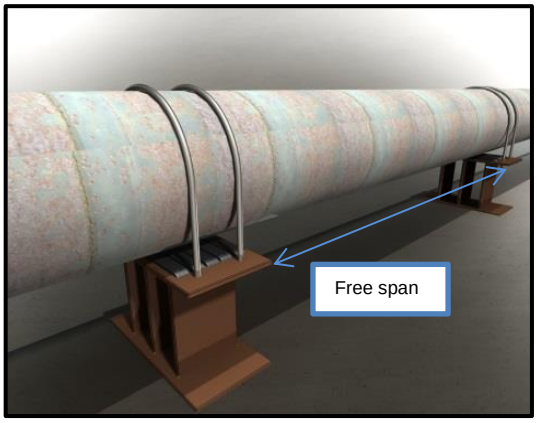
A surface preparation is needed to ensure the adhesion of the ROLLERKiT®.
The surface must present a SA 2.5 and a roughness (Rz) of 60µm minimum. Refer to surface preparation section for further information.

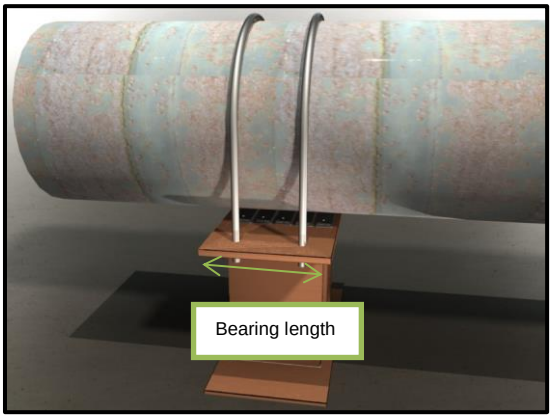
In order to prepare the surface and position the ROLLERKiT®, it is required to lift up the pipe of 20 cm minimum.

ROLLERKiT® ON PIPE

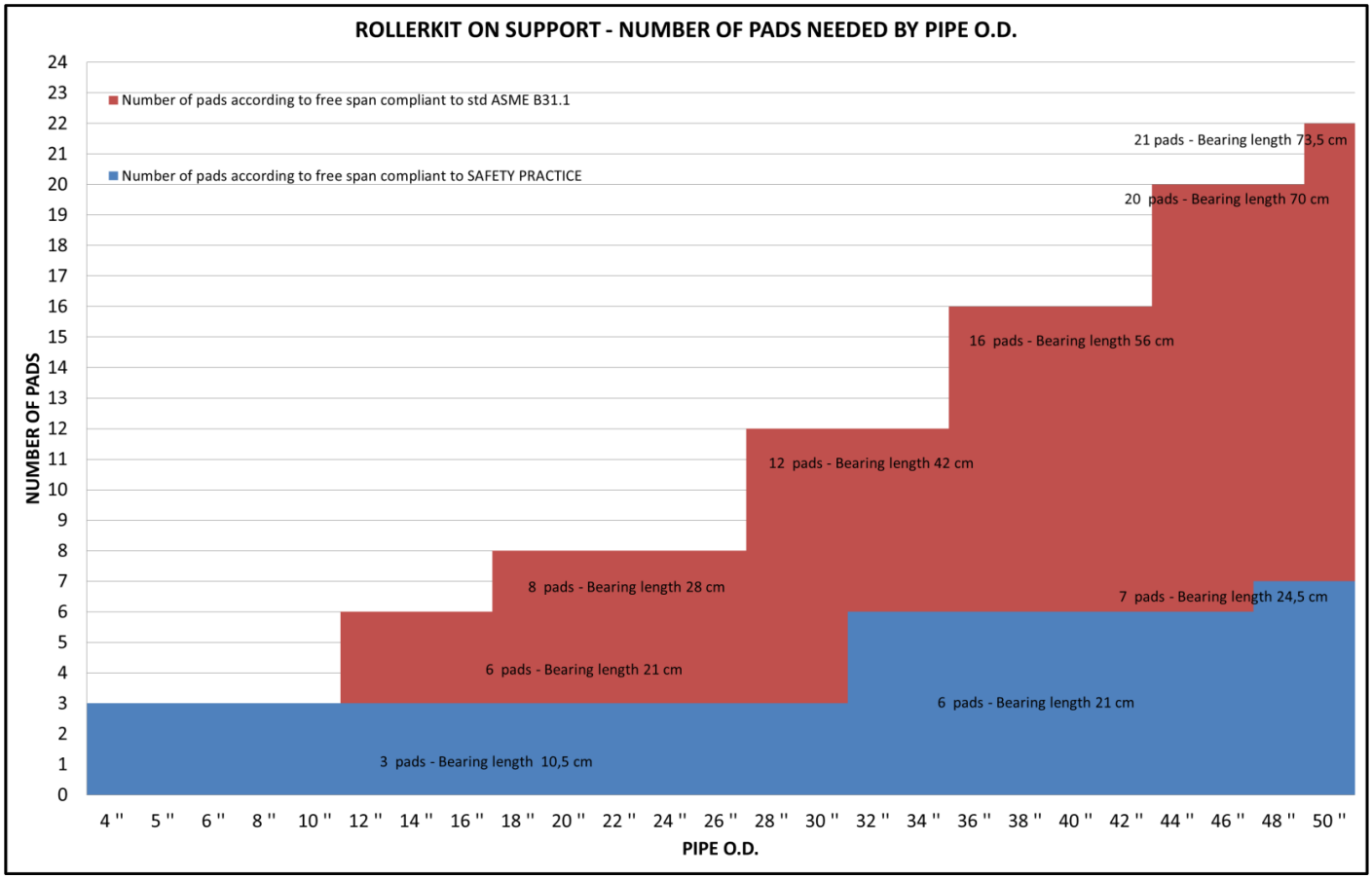


ROLLERKiT® ON SUPPORT





To determine the number of pads ROL-28 or ROL-56* needed by pipe O.D., please refer to the table below:



** Both ROL-28 and ROL-56 can be used for ROLLERKiT® on support*

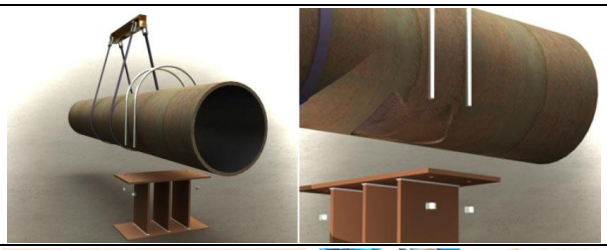
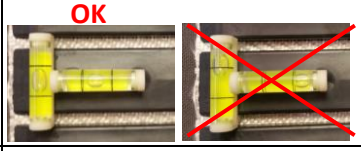
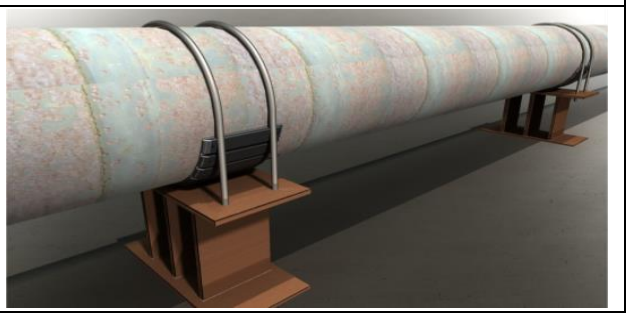
ROLLERKiT® SPECIFICATIONS

Application	ONSHORE & TOPSIDE OF OFFSHORE PLATFORM	
Model	**ROL28**	**ROL56**
Diameter Range	4" to 28"	30" to 56''
Size of the PPS pad Length * Width * Thickness (mm)	30*160*8	30*300*12
Length of the roll	3m (86 pads)	3m (86 pads)
Maximum Temperature Use	150°C*	150°C*
PAD PROPERTIES		
Pad nature	PPSGF40	PPSGF40
Density (ISO 1183)	1.65g/cm^3	1.65g/cm^3
Tensile stress at break (ISO 527)	180 MPa	180 MPa
Tensile modulus (ISO 527)	14.5 GPa	14.5 GPa
Flexural modulus (ISO 178)	13.5 GPa	13.5 GPa
Flexural strength (ISO 178)	260 MPa	260 MPa
Compressive strength (ASTM D695)	230 MPa	230 MPa
Coefficient of friction (PPS/Steel)	0.16	0.16
Izod impact 23°C (ISO 180/1U)	45 kJ/m²	45 kJ/m²
Charpy impact 23°C (ISO 179/1eU)	55 kJ/m²	55 kJ/m²
Charpy notched impact (ISO179/1eA)	9 kJ/m²	9 kJ/m²
Hardness Shore D (ISO 868)	85	85
Surface resistivity (DIN IEC 60093)	>1^{e}15 Ohm	>1^{e}15 Ohm
Dielectric Strength (kV/mm) (ASTM D149)	24	24
Flammability (UL 94)	V-0	V-0
FABRIC PROPERTIES		
Support	Glass Fiber	Glass Fiber
Weave	2x2 TWILL	2x2 TWILL
Fabric weight	395 g/m^2	395 g/m^2
PPS powder weight	50 g/m^2	50 g/m^2
RESIN PROPERTIES		
Resin characteristics	**F3X8**	**F3X8**
Density	1,6 g/cc	1,6 g/cc
Compression resistance (ASTM D695)	100 MPa	100 MPa
Compressive modulus (ASTM D695)	2.9 GPa	2.9 GPa
Bending modulus (ASTM D790)	6 GPa	6 GPa
Lap Shear strength Steel / F3X8 / Pad (ASTM D1365)	3.8 MPa	3.8 MPa
Hardness Shore D (ISO 868)	85* Tolerance > 77	85* Tolerance > 77

** values are given for indication and may vary depending on the environment*

INSTALLATION PROCEDURE

ROLLERKiT® must be installed only by trained and certified applicators. Contact us for training certificate

1- SURFACE PREPARATION • Surface Prep required: SA 2 ½ with roughness Ry5: 60 to 90 microns • Degreasing using acetone and cleaning	**MATERIALS:** • Grit blasting equipment **CONTROLS:** • Roughness • Pictorial standards of cleanliness	
2- ROLLERKiT® PREPARATION • Cut the ROLLERKiT® required length: at least 3 or 5 pads • Mix the bi component filler • To be efficient, a good mixing presents homogeneous color • The quantity of filler is **10 g per pad**. ie 1mm thickness • Apply the filler on the dry tape (over the entire white surface)	**MATERIALS:** • 3 or 5 pads • Scissors • 1 filler Cartridge • 1bi component gun • Spatula • Mixing Plate **CONTROLS:** • No lack of filler • No excess of filler	
3- ROLLERKiT® APPLICATION • Stick the central pad at 6 o'clock in order to lay flat on the support • Clip the bubble level system in the dedicated hole and confirm the perpendicularity of the 2 axis of the lower pad • Tight the ROLLERKiT® using the 2 belts to avoid any move	**MATERIALS:** • 2 belts • 1 bubble level system **CONTROL:** • Pads position **OK** 	  
4- ENDING • Let it cure according tothe Curing Table T°C (here follow) • Remove the bubble level system • Remove the belts • Lay down the pipe	**CONTROL:** • Pads position	

CURING TABLE FOR F3X8

Please refer to the following curing table before lifting down the pipe.

16°C / 60°F	25°C / 77°F	32°C / 90°F	43°C / 110°F	50°C / 122°F
7 Hours	4 Hours	3 Hours	2 Hours	1 Hour

STORAGE

The storage temperature may vary from 10°C to 30°C. A peak temperature is acceptable during transport. The storage lifetime is 2 years in original packaging.

APPLICATION NOTES

KIT COMPOSITION

ROLLERKiT® **28** / **56** is made of:

- ROLLERKiT® **300 x 16 x 0,8 (cm)** / **300 x 30 x 1.2 (cm)**
- Epoxy Filler F3X8 – **1.44 kg (4 cartridges of 360g)** / **2.52 kg (7 cartridges of 360g)**
- Ratchet Strap – **2 ratchet straps** / **3 ratchet straps**
- 2 bubble level systems
- 1 spatula
- 1 mixing Plate

INSTRUCTION

ROLLERKiT® must be used only by trained and certified applicators. Contact us for training certificate.

SURFACE PREPARATION

Proper surface preparation is critical to the long-term performance of the composite. All rust, mill scale, corrosion products and foreign matter must be removed from the surface by a combination of solvent washing and Bristle Blasting or abrasive blasting. After surface preparation, roughness should achieve a minimum of 60µm and surface cleaning according to SA 2 ½ or ST3 standards. The surface must be cleaned using an adequate solvent which evaporates leaving no film residue.

SAFETY

Each applicator should read and understand the Material Safety Data Sheets (MSDS) and the installation procedure before using 3X products.

WARRANTY DISCLAIMER

Every reasonable effort is made to insure the technical information and recommendations of this data sheet are true and accurate to the best of our knowledge at the date of issuance. However, improvements being continuously implemented to 3X products, this information is subject to change without notice. Please contact your 3X Distributor for the last updated product specifications. This 3X technical datasheet warrants the quality of this product when used according to directions. User shall determine suitability of the product for use and assumes all risks.