TDC International

Pipe Protection Solutions

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Who we are

TDC International AG (TDC) is a specialist pipeline coating provider with a proprietary application process (pau wrap®). Using glass fibre reinforced plastics (GRP), we provide customised mechanical protection for steel pipes and field joints. We are one of the largest providers of GRP surface protection coating to the pipeline industry. Headquartered in Switzerland, our production facility in Germany has been operational since the early 1990's.

Over the years, we have built a wide customer base consisting of major European utilities, pipeline operators, construction companies, steel manufacturers and traders. We continue to expand our customer base, providing products and services in Europe and beyond.

Our know-how, craftsmanship, and proprietary methodologies enable us to be uniquely positioned within the industry and allow us to consistently provide customers with high quality manufacturing. We work closely with our customers to find the optimal product solution and understand the importance of assisting them in ensuring a higher rate of success and mitigating certain risk potential in the pipeline installation process. We have adopted a stringent and thorough quality management system to ensure our manufacturing procedures and final products provide our customers' with the highest standard of pipeline mechanical protection.

Product overview

GRP is an extremely resilient composite of thermosetting materials, primarily consisting of polyester resins and glass fibre. TDC's pau wrap® coating is one of the toughest external coating types available and can be applied over a wide range of base-layers of corrosion protection coatings on pipes and welded field joints, such as polyethylene (PE), polypropylene (PP), fusion bonded epoxy (FBE) or polyurethane (PU) coatings.

pau wrap® is designed to provide an additional layer of protection against scratching, tearing, chemicals, sharp obstacles, other abrasive conditions and complex geological environment.

The key characteristics of TDC's GRP coating are:

- *The composite's hardness, protecting against mechanical and chemical damages.*
- *High elongation at break, allowing axial and radial stresses to be absorbed without damaging the pipe.*
- *Strong structural grip of the GRP coating onto the pipes or welded field joints.*

The GRP coating protects the outer (anti-corrosion) layer from damages caused by mechanical forces during installation (e.g. shear-forces, abrasion, indentation), as well as during handling and transportation.

The integrated pau wrap® system

TDC offers an integrated GRP coating system consisting of factory-applied coating for the pipes as well as field joint coating performed at the construction site. By providing the integrated pipe and field joint coating system, we help our customers enhance quality and strengthen integrity of the overall coating on the entire exterior of the pipeline. We have found through experience, that the uniform outer GRP coating covering both the pipes and the field joints provides homogeneity over the entire pipeline and thus reduces the number of potential weak spots. Integrity and quality of the coating are two of our primary focuses, which we ensure by designing the entire coating system in-house using our highly skilled technical team and by applying the on-site coating using our own certified workmen.

TDC's pau wrap® can be utilised both in trenchless pipeline installation as well as in open trench construction. For each project, the design and formulation of the coating materials can be tailored towards specific project conditions and technical requirements. Please contact us to discuss the specific requirements on a project.

Applications

Trenchless

Applied across all trenchless installation methods, such as horizontal directional drilling (HDD), direct pipe or micro-tunnelling, the key focus of the GRP coating material is on its hardness, impact resistance and high shear-strength. Hence, GRP coating is naturally an optimal solution for trenchless pipeline technology.

Open Trench

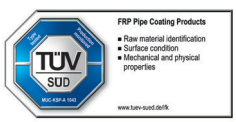
GRP coating in open trench application is predominantly ideal for space-constrained, rock back-filled trenches, where the hardness along with the scratch and indentation resistance of the GRP coating acts as a protective shield against heavy or sharp rock back-fill. Its bending flexibility allows a very small bending radius to be achieved. Shear resistance is not relevant for open trench.

Field Joints

Often the coated field joints are the relative weak spots in pipeline installations. Our integrated pipe plus field joint coating system approach enables a homogenous outer shield of seamless mechanical protection. The specially developed materials form a strong bond between the factory coating on the pipes and the field applied coating on the welding seams. TDC offers full field joint coating services from sand blasting, corrosion protection to application of GRP coating.

Technical specifications

Technical data
(trenchless)



Thickness of laminate:	≥ 5.0 mm
Barcol hardness:	≥ 40
Elongation at breaking:	≥ 2.5%
Shear resistance GRP/PE[1]:	≥ 100 N/cm²
Abrasion resistance[2]:	≤ 1.0 mm depth / 70 kg single cut burr
Impact resistance[3]:	≥ 15 J/mm at +20°C and -5°C without holidays

[1] Acc. GW 340 [2] Acc. NACE TM 0215:2015 [3] Acc. ISO 21 809-3

Technical specifications

Coating type	Laminate
Ambient temperature	-30 to 70°C (outdoor storage feasible for 1-2 years)
Material composition	**Resin:** Unsaturated polyester resin, glass fibre reinforced (GRP); catalyst activated hardening process (non-UV curing), exothermic reaction **Glass fibre:** Multi-layer laminate with variable design build-up to cater for different project and customer requirements
Special features	Pipe ends with pull off tapes to avoid grinding on construction site for FJC Coloured GRP coating optional upon request GRP laminated sliding skids (spacers) optional upon request and in accordance with project requirements