PIPE SYSTEMS

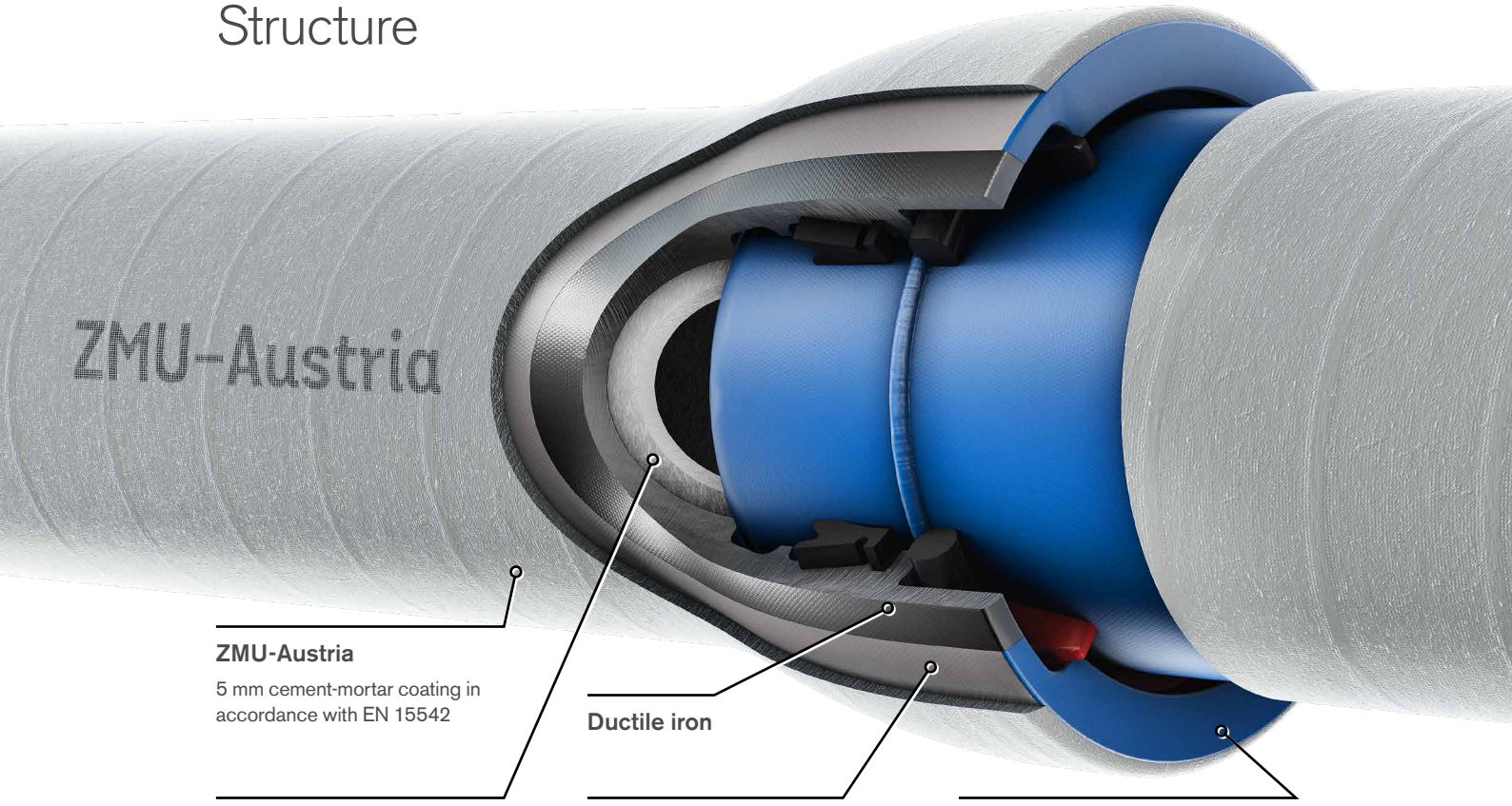
ZMU-Austria

Ready for extreme conditions

ductile iron solutions
www.trm.at

Technical data

Structure



ZMU-Austria

5 mm cement-mortar coating in accordance with EN 15542

Ductile iron

Internal cement lining

Portland / blast furnace / high-alumina / synthetically modified cement, in accordance with ÖNORM B 2562 and EN 545 / 598

Zinc coating

200 g/m² in accordance with ÖNORM B 2555 and EN 545

Coating of the spigot and socket areas

PUR / epoxy standard coating in accordance with EN 545 and ÖNORM B 2560, mean layer thickness of 120 µm

ZMU-Austria:

- Positive locking systems
  TYTON socket joints
- Laying length: 5 m - 6 m

Standards:

ÖNORM EN 15542
ÖNORM EN 545
ÖNORM EN 598
ÖVGW* certificate

⚠ All information, guides and product variants can be found in the relevant TRM product catalogues.

* Austrian Association for Gas and Water

Unbeatable advantages

Highest quality cement-mortar coating made in Tirol

ZMU-Austria is applied during the extrusion process:
The cement mortar is extruded onto the pipe with a mesh bandage and is smoothed at the same time.

The cement specially developed by us has very high sulfate resistance, enormous strength and high impact protection. The entire pipe is coated with zinc before the cement is applied. The spigot and socket areas are free from cement mortar and are provided with our proven PUR or epoxy coating.

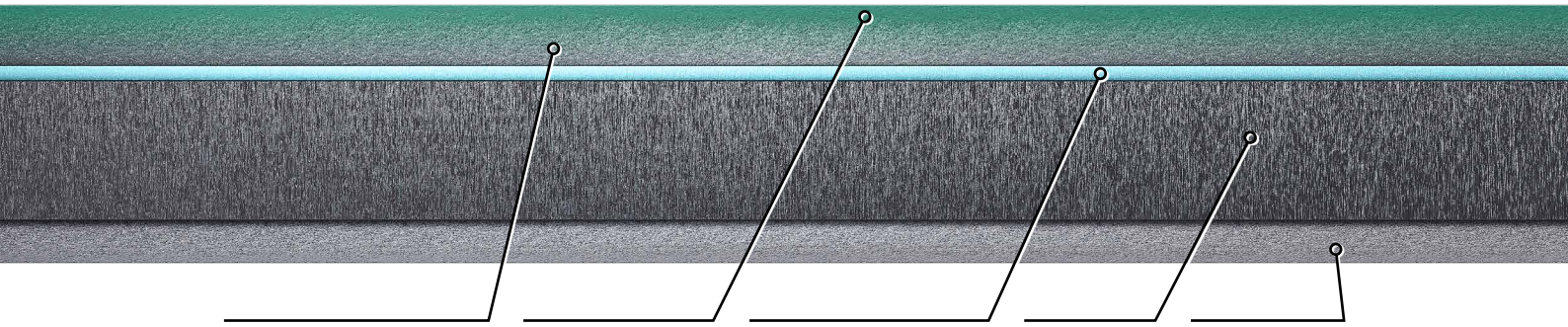
✔	**ZMU-Austria**
	Optimum mechanical protection
	Additional operational protection
	Enhanced corrosion protection
	Withstands chemical & bacterial attacks
	Highly sulfate-resistant cement
	Optimum provision for future changes in the soil
	Saves on bedding material and disposal costs
	Can be used in all classes of soil
	Extremely long service life
✔	**Quality - made in Tirol**
	Seamless production process
	Inspection at every stage of production

✔	**Everything from one source**
	System supplier (pipes, fittings, special products and special solutions)
✔	**70 years of experience**
	Innovation & know-how based on tradition
✔	**Sustainability**
	Short lead time
	Recycled raw materials
	Environmentally friendly production
	Durability & high safety reserves
	Environmentally friendly

An Austrian innovation

For high performance

ZMU-Austria layer structure and function



Cement-mortar coating
Highly sulfate-resistant fiber cement mortar with a high pH value: no corrosion of ductile iron

Carbonation
The cement hardens further on the surface and forms a hard, durable layer

Zinc coating
Active corrosion protection

Ductile iron

Internal lining
Cement mortar

Mechanical protection

ZMU-Austria offers optimum protection during transport, storage and in open trench as well as in trenchless installation. In addition, this coating extends operational protection. Installation is possible in all classes of soil - without soil exchange and without any additional pipe bedding. Virtually any excavation material can be used (the inclusion of stones of up to 100 mm is permitted). This saves transport of external materials and reduces disposal costs. Furthermore, ZMU-Austria supports the optimum mechanical fracture properties of the ductile iron pipe.

Chemical protection

The special mortar composition offers optimum protection in highly aggressive, contaminated soils containing sulfates. The protective effect is based primarily on the alkalinity of the mortar that is used. The hydration of the cement creates highly alkaline calcium hydroxide which suppresses any corrosion with a pH value more than 10. Through our further development of the synthetically modified cement, water repellency is increased.
Rubber or shrink-on collars in the area around the joints complete the protection.

The versatile ZMU-Austria

Applications & solutions

Alpine, rocky and inaccessible terrain

+ Saves on additional backfill and bedding material
+ Preservation of the natural soil structure

Transport & storage

+ Protection against mechanical stress and impact during transport, storage and installation

Aggressive and contaminated soils containing sulfates

+ Corrosion protection by ZMU-Austria
+ Electrochemical and antibacterial effect of the zinc coating

Extreme weather events

+ Safe, thanks to extreme durability in combination with the positive locking system

“Schwammstadt” principle

+ The pipe trench acts as a water store
+ The use in this application is possible, thanks to the root resistant VRS-T® gasket and the robust coating

Trenchless installation

+ Protection against damage during installation

River crossings

+ Quick and environmentally friendly solution
+ No need to encase the pipe in cement

Stray current

+ Usable within areas of potential stray currents, thanks to the superior electrochemical properties

Tailor-made accessories

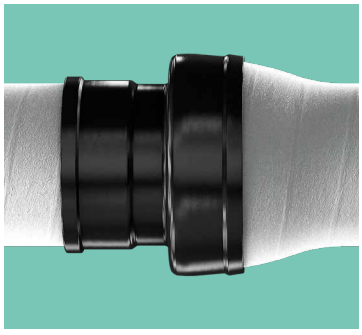
For a smooth installation

TRM tapping saddle

For branch pieces at higher pressures.
The ZMU-Austria is partially removed, and the tapping saddle is clamped directly onto the ductile iron pipe.

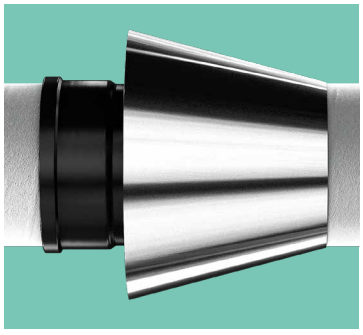
Tapping saddle for ZMU-Austria

For the subsequent installation of a branch piece at low pressures, directly onto the cement-mortar coating.



Cement-mortar coating protective collar

Optimum protection for the socket joint.



Sheet metal cone

For additional socket protection with trenchless installation.

Depth-restrictor

Safe and simple removal of the cement-mortar coating. For shortening a pipe or by assembly of TRM tapping saddles.

PIPE SYSTEMS

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European Association for Ductile Iron Pipe Systems
Fachgemeinschaft Guss-Rohrsysteme

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OVGW GEPRÜFT

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