MESA ENGINEERING

PRODUCTS & SOLUTIONS CATALOG
2026



CATALOG · THERMAL INSULATION

INSULATION
OF PIPING AND EQUIPMENT

Stone wool pipe sections · Elbows and segments · Fittings and special shapes · Metal cladding

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CATALOG

2026

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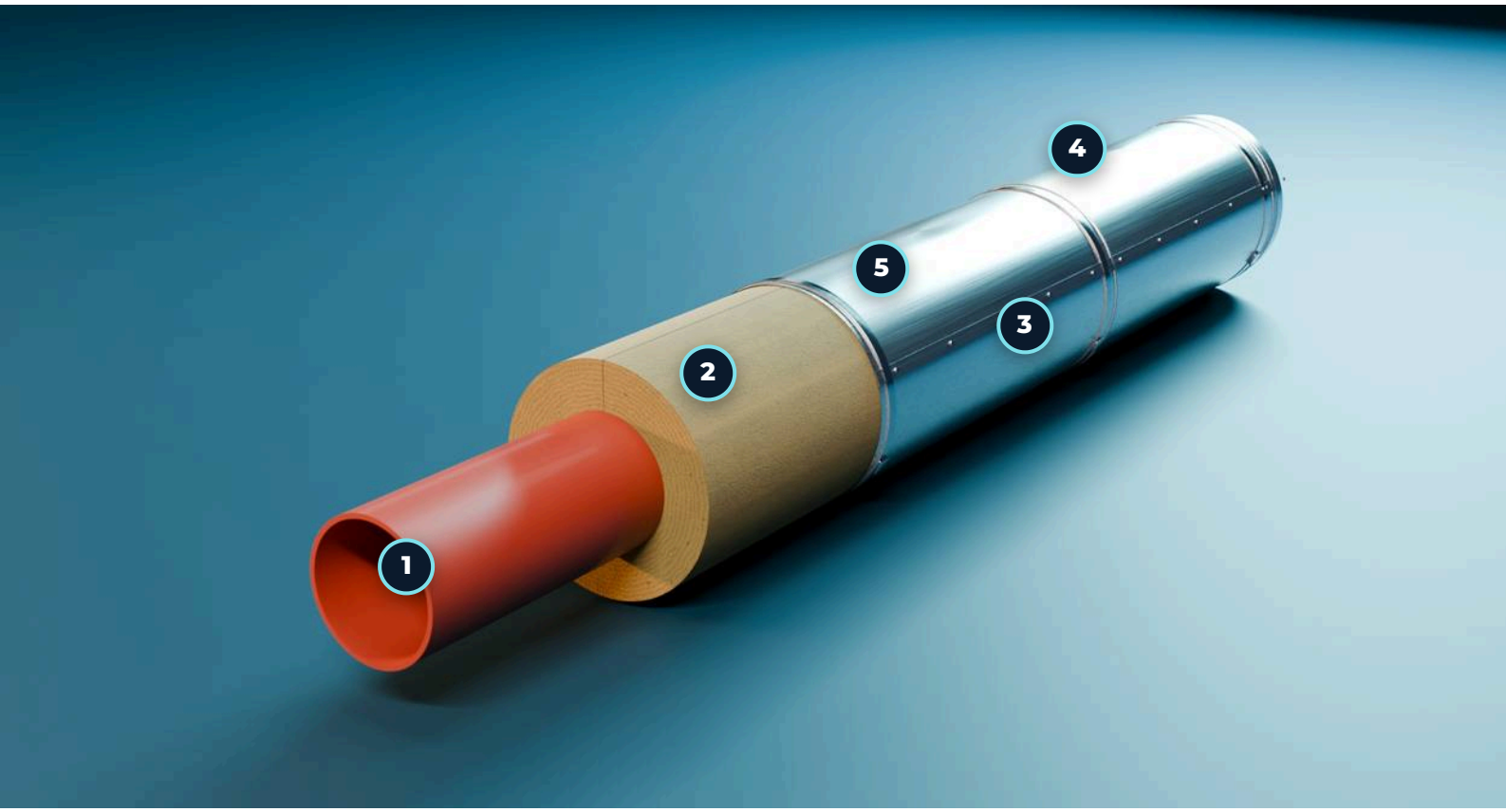
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01 — SYSTEM

Thermal insulation system

Pipe section, cladding, fasteners: one system designed to last for decades.



1 Pipe
with anti-corrosion coating

2 Stone wool pipe sections
1–2 layers, staggered joints

3 Cladding
aluminum · stainless · galvanized

4 Beading and overlap
rigidity, joints protected from moisture

5 Bands and screws
secure fixing of the jacket

–180...+650 °C
SERVICE TEMPERATURE

Ø 18–1020 mm
INNER DIAMETER

20–120 mm
WALL THICKNESS

NG
NON-COMBUSTIBLE

- **Reduced heat loss**
- **Personnel burn protection**
- **Condensation control**
- **Fire safety**



02 — PRODUCTS

Stone wool pipe sections

Unfaced and aluminum foil-faced, for hot and cold insulation.

18–1020 INNER DIAMETER, MM

20–120 WALL THICKNESS, MM

–180...+650 SERVICE TEMPERATURE, °C

80–150 DENSITY, KG/M³



Unfaced

A

For use under metal cladding: outdoor lines, pipe racks, process units.

NG | up to +650 °C



Foil-faced

B

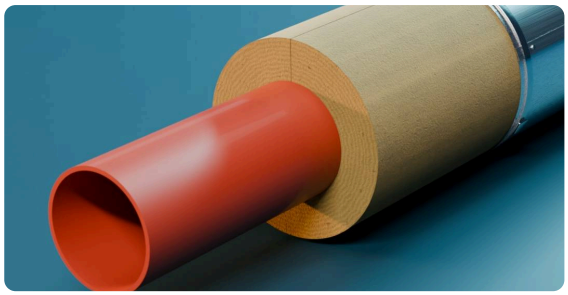
The foil acts as a reflective layer and vapor barrier; indoors, cladding may be omitted.

NG / G1* | foil up to +100 °C

* The combustibility class of faced products depends on the foil type (reinforced / non-reinforced). NG = non-combustible, G1 = low combustibility (Russian classification). Typical values based on data from Russian manufacturers.

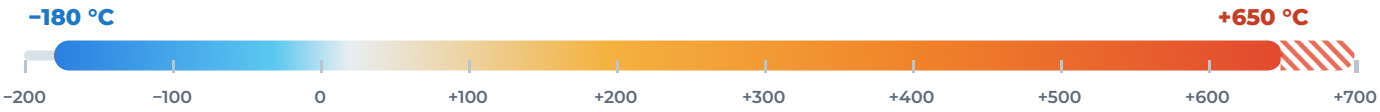
02 — PROPERTIES

Typical properties



PARAMETER	UNFACED	FOIL-FACED
Inner diameter	18–1020 mm	18–1020 mm
Wall thickness	20–120 mm, in 10 mm steps	20–120 mm, in 10 mm steps
Section length	1000 mm	1000 mm
Density	80–150 kg/m³	80–150 kg/m³
Process temperature	−180…+650 °C	−180…+650 °C
At the foil surface	—	max. +100 °C
Thermal conductivity λ_{25}	0.036–0.040 W/(m·K)	0.036–0.040 W/(m·K)
Combustibility class	NG	NG or G1
Design	longitudinal slit	slit + foil overlap with adhesive tape

SERVICE TEMPERATURE, °C



Certain grades: up to +700 °C. Upper limit as per the product data sheet.

WALL THICKNESS, MM



APPLICATIONS

- Process piping
- Steam and condensate lines
- Heating networks, substations, boiler houses
- Equipment and valves
- Cold insulation*
- Outdoor installation**

Typical values based on data from Russian manufacturers; properties of a specific grade as per its technical specifications (TU) and data sheet. * With a vapor barrier. ** With metal cladding.



03 — ELBOWS

Elbows and segments

Bends are insulated with the same material and thickness as the straight run.

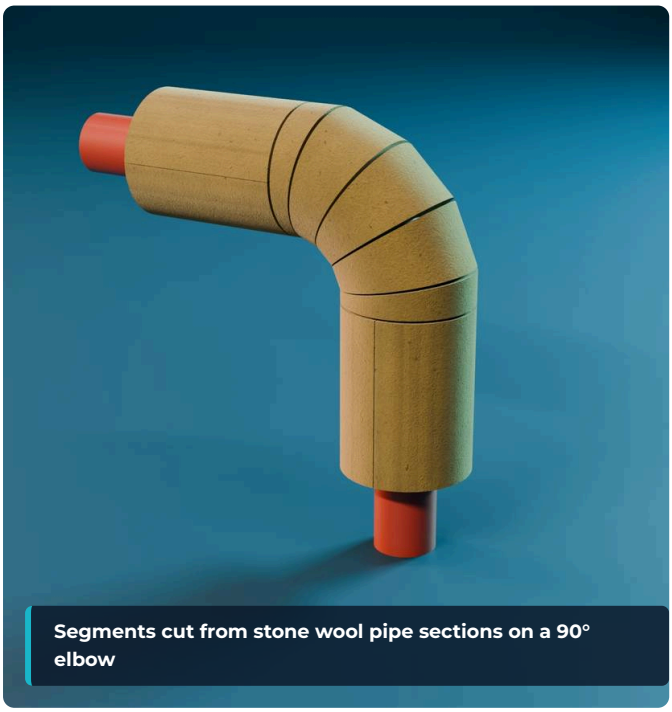
90°
3 + 2 half-segments

60°
2 + 2 half-segments

45°
1 + 2 half-segments

30°
1 + 2 half-segments

Any
angle fitted on site



Segments cut from stone wool pipe sections on a 90° elbow

1 **Measuring**
OD, bend radius and angle

2 **Cutting**
segments cut from pipe sections to a template

3 **Assembly**
staggered joints, bands / wire

4 **Jacket**
gored elbow with beading

Ø 18–1020 mm | bend R 1–1.5 OD | thickness = straight run

04 — FITTINGS

Fittings and special shapes

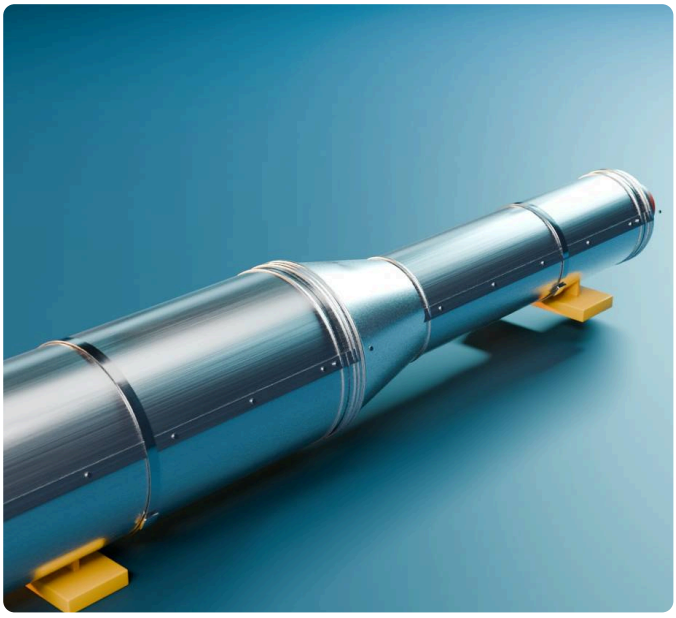
Made to measure for any pipe route and any detail.



Tees 01

beaded jacket branch along the intersection

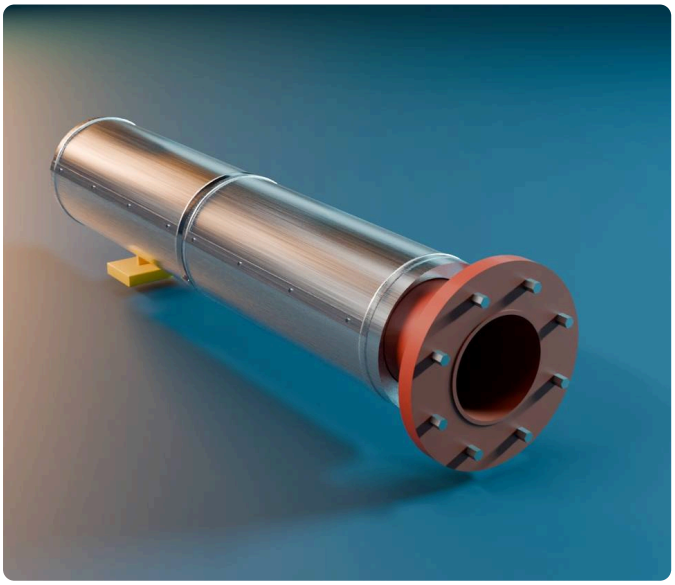
SS · Al · galv.



Reducers 02

concentric and eccentric cones

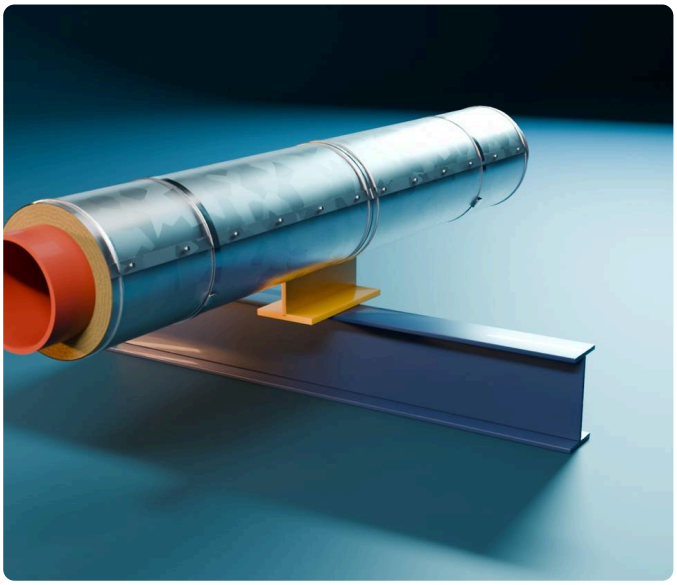
OD1 → OD2



End caps 03

closure of the insulation ends next to flanges and equipment

flat ring · conical



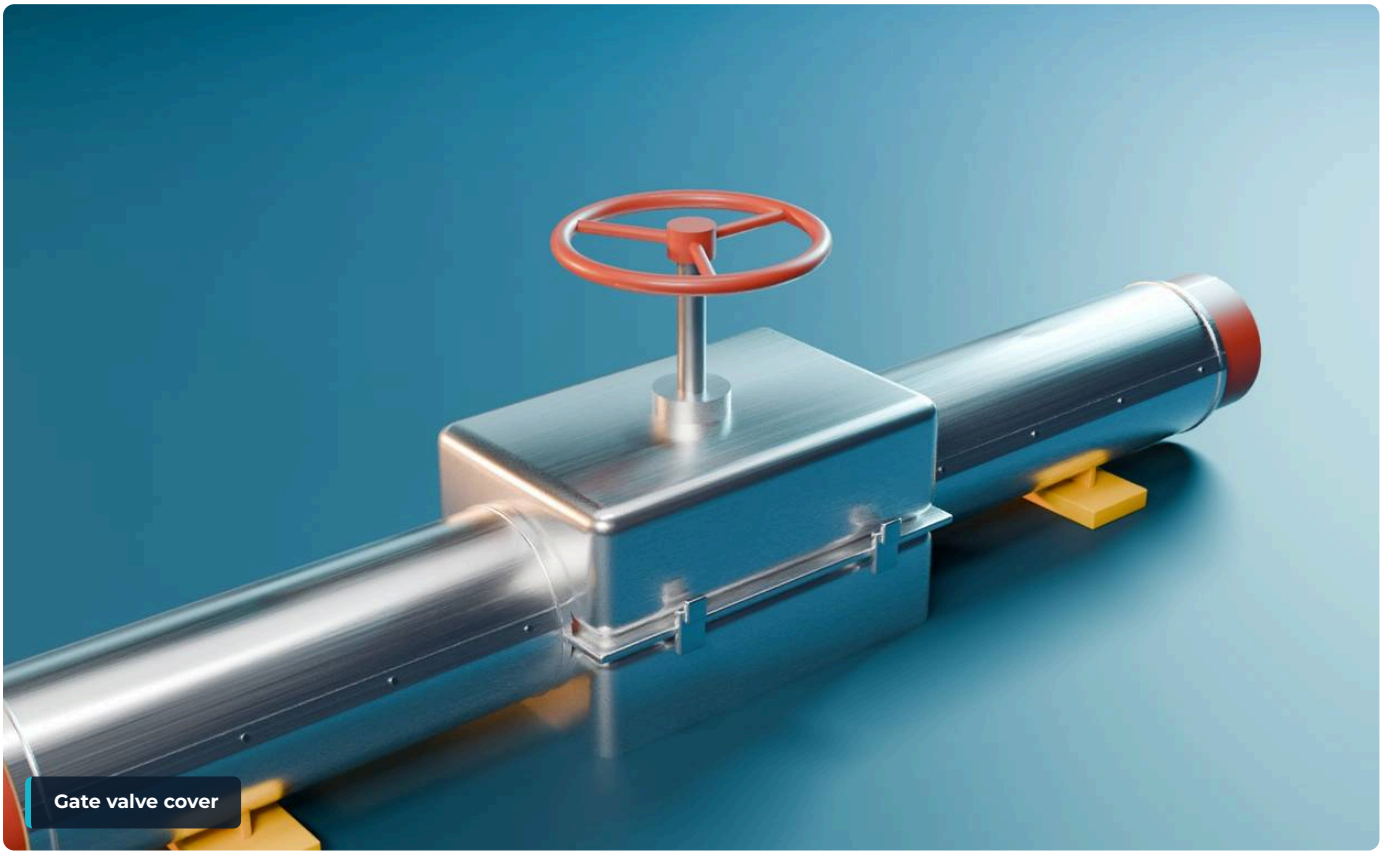
Support cutouts 04

sealed penetrations for supports, hangers and instrument nozzles

fitted on site

05 — REMOVABLE COVERS

Covers for valves and flanges


Gate valve cover


Flanged joint cover

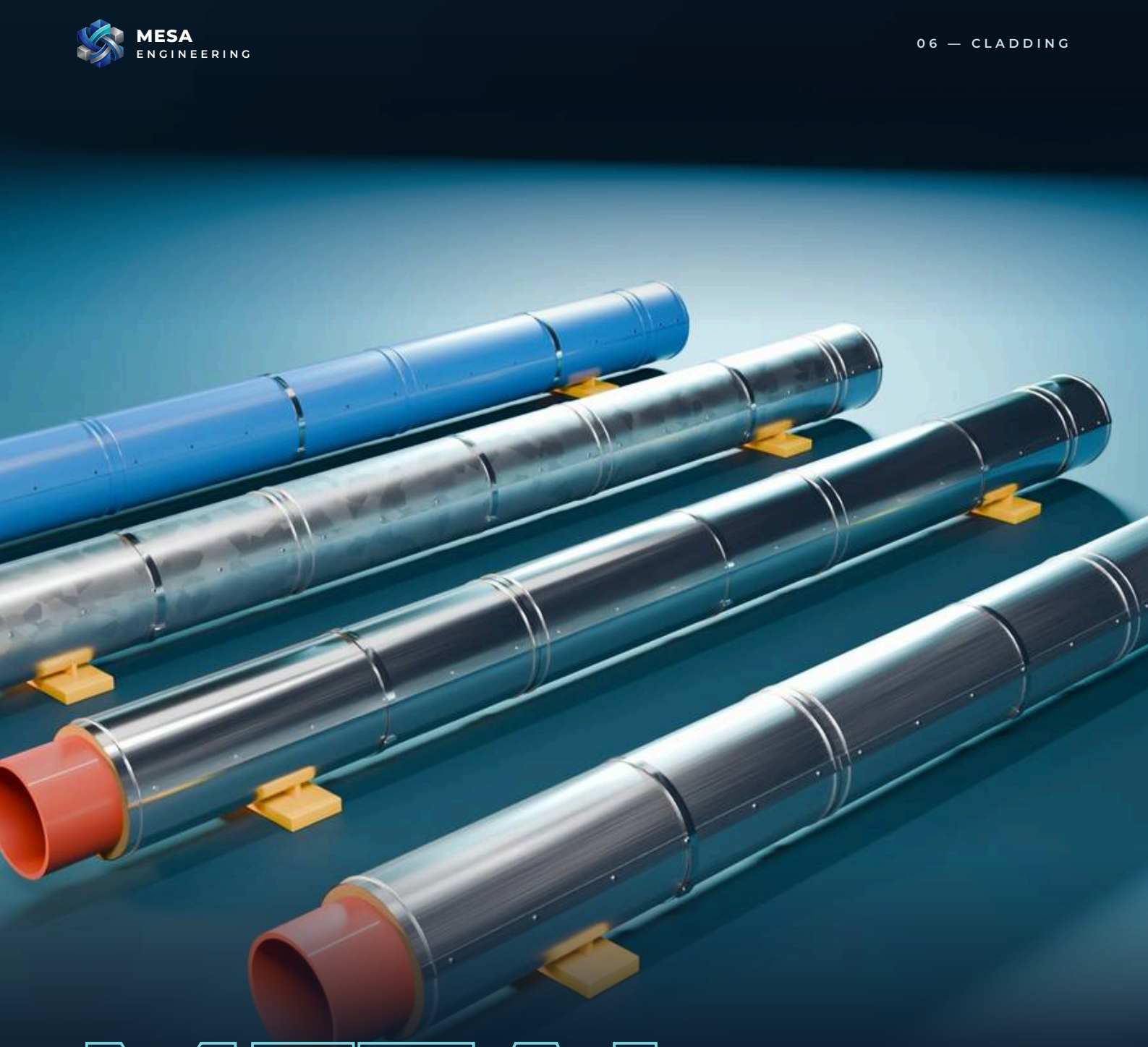
Quick-release latches
installation and removal without tools

Access to valves
maintenance without damaging the insulation

Reusable
the cover can be removed and refitted

Insulation inside
stone wool or removable mattresses

Gate and control valves | Flanges | Strainers | Pumps | Instrumentation



METAL

Metal cladding

Protects the insulation against moisture, UV radiation and mechanical damage.

Aluminum
AD1 · AMg2 · 0.5–1.0 mm

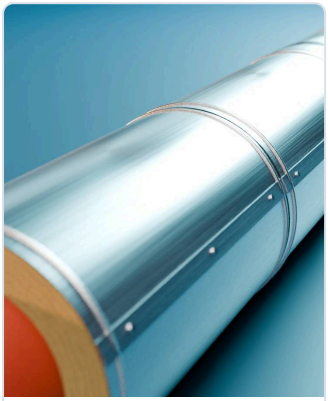
Stainless
AISI 304 / 316 · 0.5–0.8 mm

Galvanized
steel · 0.5–0.8 mm

Polymer-coated
galvanized + coating

06 — MATERIALS AND APPLICATIONS

Choosing the cladding



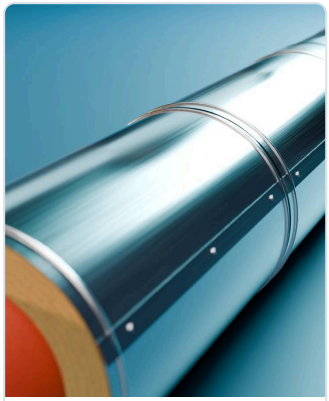
Aluminum

AD1 · AMg2

0.5–1.0 mm

Lightweight, corrosion-resistant, easy to form

- Outdoor installation
- Corrosive environments
- Food / pharma
- Offshore and Arctic
- Fire-hazard areas



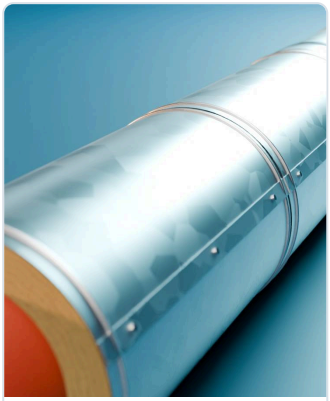
Stainless steel

AISI 304 · AISI 316

0.5–0.8 mm

316: chlorides, marine atmosphere, offshore

- Outdoor installation
- Corrosive environments
- Food / pharma
- Offshore and Arctic
- Fire-hazard areas



Galvanized steel

continuous-line galvanized

0.5–0.8 mm

Cost-effective; indoors and under canopies

- Outdoor installation
- Corrosive environments
- Food / pharma
- Offshore and Arctic
- Fire-hazard areas



Polymer-coated steel

galvanized + polymer

0.5–0.8 mm

Color coding, enhanced protection

- Outdoor installation
- Corrosive environments
- Food / pharma
- Offshore and Arctic
- Fire-hazard areas

recommended · limited / per design · not recommended

FASTENERS AND DETAILS

Bands
SS strip 0.5–0.7 × 20 mm with buckle

Self-tapping screws
SS / galv., spacing per design

Rivets
blind rivets, Al / SS

Beading
stiffening ribs at joints

Overlap
30–50 mm, lapped to shed water

Sealant
external and vertical joints

Sheet thickness per SP 61.13330.2012 (Table B.2), depending on the insulation diameter; 0.3–0.5 mm is permitted for small diameters. Material selection depends on service conditions and project requirements.

07 — COLD AND CRYOGENIC

Cold and cryogenic insulation



1 **Pipe**
anti-corrosion protection

2 **First layer**
PIR / cellular glass / elastomeric foam

3 **Second layer**
offset joints

4 **Vapor barrier**
continuous and sealed

5 **Cladding**
band-fixed, no penetrations

–196 °C
LIQUID NITROGEN

–162 °C
LNG

0 condensate
DEW-POINT DESIGN

2–3 layers
MULTI-LAYER SYSTEMS

- **The vapor barrier is the key layer**
- **Bands instead of screws**
- **Sealed joints and ends**

System build-up and layer thicknesses per design and calculation (SP 61.13330.2012). Team experience: Arctic LNG 2, Linde Azot, ZapSib-2.

08 — PROCESS

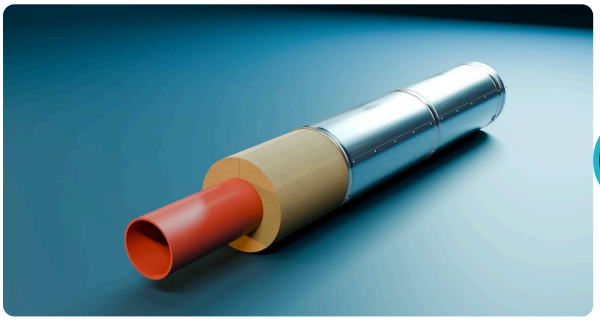
How we work



01

Survey

Site visit, measurements, schedule of details



02

Design

Thickness calculation, material selection, details



03

Prefabrication

Jackets, elbows and fittings made to measure



04

Installation

Insulation and cladding by our own crews



05

Quality control

Step-by-step inspection and as-built documentation

09 — TEAM EXPERIENCE

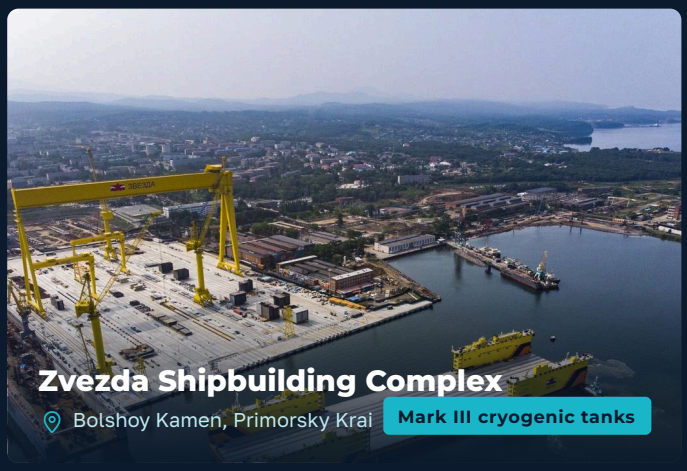
Experience on major projects











Projects on which the MESA Engineering leadership team worked in previous roles, before the company was founded.

CONTACTS

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Turnkey thermal insulation, from design calculations to handover

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Pipe sections · Elbows · Fittings · Cladding

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