



STENCA PIPE





Stenca Pipe Insulation

From -50°C to +140°C

Stenca Pipe is designed to minimize the 5 biggest challenges for pipe and vessels insulation in corrosive environments.

- Excellent CUI results
- Does not dust or affect adjacent disciplines
- Low weight
- Easy and quick installation
- High compressive strength

Stenca Pipe is environmentally friendly insulation, with very low carbon footprint.

- Up to 89% carbon emissions reduction when using the Stenca Pipe!



- ✓ 40 mm thick 600 mm length
- ✓ Sizes from 3/8" up to 42"
- ✓ Prefabricated sections 45° and 90° bend, long radius bend, T-piece and straights
- ✓ Has Tongue and Groove to insure perfect fit
- ✓ Easy and time saving installation



Stenca Pipe - Excellent CUI results

Salt Spray Chamber Exposure, DNV Bergen

Test duration	1440 hours (60 days)
Temperature	35° C
Salt concentration	5 %
Humidity	100 %

Test conditions



Stenca Pipe in the chamber



Stenca Pipe after test

Longevity, Tyra West after 27 years



Used in offshore conditions for 27 years.

- Long lifetime
- Large cost saving
- Minimizing risk of CUI
- Low maintenance costs
- ≤ 1% corrosion

- ✓ Water and UV resistant silicone cloth
- ✓ Anti slippery
- ✓ Do not absorb water



Stenca Pipe - no dust or affect adjacent disciplines



- ✓ No need for cover / habitat due to dust during installation of Stenca Pipe
- ✓ No need to shut down the workspace for other disciplines
- ✓ Other disciplines can work in the same area
- ✓ Higher progress

Stenca Pipe - Low weight



- ✓ 66 kg per m³
- ✓ No steel cladding

Weight difference at 10,000 meters, average pipe diameter 5", which is equivalent to 5,000 m²

10 000 m Stenca Pipe is 26 500 kg

10 000 m Cellular glass + 0,5 mm SS is 87 000 kg

70% weight reduction by using Stenca Pipe!!

In the calculations, 40 mm thickness is used.

Stenca Pipe - Easy and quick installation



Installation Manuals which illustrate with pictures how to work with Stenca Pipe

- ✓ Delivers ready for use – easy to assemble
- ✓ Can easily be cut and formed, no special equipment needed
- ✓ Quick and easy production (on-site) of thermal and acoustic boxes
- ✓ Probably best solution for paid per meter contracts
- ✓ Quick training of installers

Stenca Pipe thermal insulation - Easy and Quick installation



Average hourly use per 1 meter

- ✓ Stenca Pipe 1 hrs
- ✓ Cellular glass + SS 3 hrs

Labor costs related to installation of 10,000 meters*, average pipe diameter 4.

Offshore rate NOK 600,00 hrs

Stenca Pipe NOK 6 000 000,00

Cellular glass + 0,5 mm SS NOK 18 000 000,00

**Labor cost saving 67% by using Stenca Pipe!!
Products cost saving 48% by using Stenca Pipe!!**

**Complexity factor has not been used*

Stenca pipe is faster to install, entails large savings on accommodation, transport of personnel offshore and more.

Stenca Pipe - High compressive strength



- ✓ The pipe sections have a high compressive strength and at the same time very light weight.
- ✓ Avoids damage when the system is under construction and in operation
- ✓ Can be pre-installed onshore

- ✓ Can easily resist foot traffic and similar load
- ✓ Reduce maintenance costs
- ✓ Reduce need for inspections

Stenca Pipe – thermal and acoustic insulation

Colors



All items can be supplied as/or thermal and acoustic

Available in black, red and gray



Stenca Pipe delivers as Straight, 45° and 90° bend/segment bend/long radius bend, End Cap, Conical end termination, T-Piece, Reduction, Flange- and valve box, vessels

Stenca Pipe	
Prevent CUI	✓
Easy and fast to install	✓
Low weight (below 100 Kg/m ³)	✓
Subzero insulation capacity	✓
Insulation capacity up to +140° C	✓
Sea water resistant	✓
UV resistant	✓
Anti-slip resistant	✓
Acoustic properties	✓
Prepared for Heat Tracing	✓
Can resist foot traffic	✓
Low installation time (one working phase)	✓
No release of dangerous or harmful particles	✓
No environmental hazard during installation	✓
No hot work during installation	✓
No internal water absorption	✓
Performance in the event of puncture in surface	✓
Easy inspection	✓
Reusable after inspection	✓
Installation in all weather conditions	✓
No environmental control to dump/dispose	✓
Can be pre-installed onshore	✓
Long life durability +20 years	✓
Non-combustible	✓
Can be installed by only one Person	✓
Certified products	✓

Stenca Pipe – acoustic insulation

ISO 15665:2003 Acoustics - Acoustic insulation for pipes, valves and flanges

- NORSOK Class 6, 7 and 8
IE Class A, B and C
- Approved for pipe, vessels and acoustic boxes
- Tested and approved together with Stopaq

NORSOK Class 6 (A)

11 mm spacers + 3 mm Sound Barrier Mat
+ Stenca Pipe

or

11 mm spacers + 25 mm Glass Needle Mat
+ Stenca Pipe

NORSOK Class 7 (B)

11 mm spacers + 3 mm Sound Barrier Mat
+ Stenca Pipe

or

11 mm spacers + 25 mm Glass Needle Mat
+ Stenca Pipe

NORSOK Class 8 (C)

11 mm spacers + 25 mm Glass Needle Mat
+ 3 mm Sound Barrier Mat + Stenca Pipe



85-90% faster to install!!!

- Low temperature < 100° C and High temperature < 170° C
- No dust
- Delivered ready for installation
- Built up inside Stenca Pipe
- Time-saving; Fastest acoustic insulation solution

Class 6	inch (")	Time		Class 6 & 7 low temp	inch (")	Time
Cellular glass	3	3,50		Stenca Pipe, low temp	3	0,50
Cellular glass	10	6,16		Stenca Pipe, low temp	10	0,50
Cellular glass	16	8,17		Stenca Pipe, low temp	16	0,75
Class 7	inch (")	Time		Class 6 & 7 high temp	inch (")	Time
Cellular glass	3	3,78		Stenca Pipe, high temp	3	0,50
Cellular glass	10	6,72		Stenca Pipe, high temp	10	0,50
Cellular glass	16	10,50		Stenca Pipe, high temp	16	0,75
Class 8	inch (")	Time		Class 8	inch (")	Time
Cellular glass	3	4,23		Stenca Pipe	3	0,50
Cellular glass	10	9,00		Stenca Pipe	10	0,50
Cellular glass	16	10,80		Stenca Pipe	16	0,75

Time estimate Stenca Pipe vs Cellular glass

Stenca Pipe – Life cycle assessment and carbon footprint

The functional unit for this assessment is defined as:

“Provide thermal insulation corresponding to 1.0 m² K/W to 1 m² of substrate’s flat surface for a lifetime of 30 years”

- The distribution stage, the main transportation scenario, was assumed to be from each of the manufacturing locations to an average distance to Bergen, Norway and Stavanger, Norway.
- The three other products, a metallic jacketing and metallic bands of stainless steel is used in this report.

The carbon footprint of the Stenca pipe was found to be 8.674 kg CO₂ eq.

Facing the challenging needs to reach sustainable development in the offshore and marine industry, the potential to lower these environmental impacts, hereby up to 89% reduction of carbon emissions, can be retrieved by the industry by using the Stenca Pipe!!

The report is prepared by Reflow, a Danish environmental consultancy company with a focus on measuring, documenting, and reducing the environmental footprint of products and processes.

Impact category	Unit	Objects of assessment			
		Stenca Pipe	Cellular glass	Stone wool	Pyrogel
Global warming	kg CO ₂ eq	8.674	19.443	49.288	88.080
Stratospheric ozone depletion	kg CFC11 eq	3.85E-06	1.58E-05	4.34E-05	4.08E-05
Ionizing radiation	kBq Co-60 eq	0.151	13.177	8.504	22.192
Ozone formation, Human health	kg NO _x eq	0.020	0.036	0.095	0.128
Fine particulate matter formation	kg PM2.5 eq	0.013	0.027	0.052	0.221
Ozone formation, Terrestrial ecosystems	kg NO _x eq	0.021	0.037	0.096	0.131
Terrestrial acidification	kg SO ₂ eq	0.028	0.046	0.126	0.251
Freshwater eutrophication	kg P eq	0.004	0.014	0.037	0.065
Marine eutrophication	kg N eq	0.001	0.001	0.003	0.005
Terrestrial ecotoxicity	kg 1,4-DCB	44.277	163.996	250.726	328.244
Freshwater ecotoxicity	kg 1,4-DCB	1.236	2.498	4.088	5.174
Marine ecotoxicity	kg 1,4-DCB	1.611	3.312	5.420	6.863
Human carcinogenic toxicity	kg 1,4-DCB	0.767	8.287	9.857	11.402
Human non-carcinogenic toxicity	kg 1,4-DCB	22.415	43.848	91.507	125.330
Land use	m ² a crop eq	0.148	1.565	7.152	2.239
Mineral resource scarcity	kg Cu eq	0.043	0.478	0.479	0.635
Fossil resource scarcity	kg oil eq	2.931	4.717	12.011	22.788
Water consumption	m ³	0.233	0.252	1.726	0.744

Characterized impact results for Stenca Pipe/tank, cellular glass, stone wool and pyrogel with the total impact contributions including the manufacturing, distribution and disposal stages.



TR1660 Piping and equipment insulation Version 7.01 Thermal insulation products

5 App B - Insulation products for piping and equipment (NORMATIVE)

SR-79282, Norsok M-004:2018, Annex A, Add - The following insulation systems in Table 1, 2 and 3 and products are preapproved for piping and equipment by Equinor for use in all projects.

- Aerogel, 5 manufactures
- Mineral wool, 2 manufactures
- Cellular glass, 2 manufactures
- AES fibre, 2 manufactures
- Stenca Pipe



Onshore and Offshore

SOUTH ARNE ∞ HESS Denmark
TYRA WEST ∞ Maersk Oil & Gas
TYRA EAST ∞ Maersk Oil & Gas
GORM C ∞ Maersk Oil & Gas
HALFDAN ∞ Maersk Oil & Gas
DAN FG ∞ Maersk Oil & Gas
MAERSK INNOVATOR ∞ Maersk Drilling
BORGLAND DOLPHIN ∞ Fred. Olsen Energy ASA
BREFORD DOLPHIN ∞ Fred. Olsen Energy ASA
BIDEFORD DOLPHIN ∞ Fred. Olsen Energy ASA
SONGA TRYM ∞ Songa Offshore
SONGA DELTA ∞ Songa Offshore
POLAR PIONEER ∞ Transocean
TRANSOCEAN ARTIC ∞ Transocean
TRANSOCEAN SPITSBERGEN ∞ Transocean
TRANSOCEAN WINNER ∞ Transocean
TRANSOCEAN SEARCHER ∞ Transocean
DEEPSEA ABERDEEN ∞ Oddfjell Drilling
DEEPSEA Atlantic ∞ Oddfjell Drilling
DEEPSEA Stavanger ∞ Oddfjell Drilling
DEEPSEA Yantai ∞ Oddfjell Drilling
GASNOR TANKFARM ∞ Gasnor Kollnes
SCARABEO 5 ∞ ENI / Saipem
SCARABEO 8 ∞ ENI / Saipem
DOLWIN ALPHA ∞ TENNET / SIEMENS
HELWIN BETA ∞ TENNET / SIEMENS
ALEXELA TANKFARM ∞ Alexela Sløvåg
HERJE Platform DONG Energy (DSME)
HYUNDAI TBN2 ∞ Hyundai Heavy Industries
OCEAN GEAT WHITE ∞ Diamond Offshore



WEST HERCULES ∞ Seadrill
WEST ELARA ∞ Seadrill
WEST Bollsta ∞ Seadrill
West Linus ∞ Seadrill
Lloyd Nobel ∞ Noble Drilling
OSEBERG FELTSENER ∞ Equinor
SLEIPNER ∞ Equinor
DRAUPNER ∞ Equinor
KÅRSTØ ∞ Equinor

FPSO

NGUJIMA YIN ∞ Maersk FPSOs
NIGALOO VISION FPSO ∞ BW Offshore
PETROJARL KNARR FPSO ∞ Teekay Petrojarl
Petrojarl 1 / Atlata FPSO ∞ Teekay Petrojarl/Altera Infrastructure
CIDADE DE SAQUAREMA FPSO - SBM
CIDADE DE MARICA FPSO- SBM
CIDADE DE ILHA BELA FPSO- SMB
ESPÍRITO SANTO FPSO- SBM
ASENG FPSO - AFRIKA



Some of our projects with Stenca Pipe