



Test Report

Report No.: 853391T

- Assignor:** Nordic Build A/S
Bjernermarksvej 54
DK-5700 Svendborg
- Subject:** **Test specimens according to NB-3, for the determination of short term bending capacity of elements**
- Sampling:** The test material was prepared by the assignor and the tests were carried out at the premises of Nordic Build in Ryslinge, Denmark, under supervision of the Danish Technological Institute, Taastrup.
- Method:** NB_3 Bestemmelse af korttidsbøjningskapaciteten af hele elementer (Determination of short term bending capacity of elements)
Test set-up – see appendix 2.
The test material was not conditioned prior to testing.
Testing was carried out at normal room temperature.
The salt sacks were put on gypsum panels (total weight 50 kg), in order to ensure the distribution of the load equally to the two loaded elements.
The reading of the deflection was carried out approximately 30 seconds after each loading
- Equipment:** Dead load: 120 sacks of road salt, each 25 kg. Weight of sacks were spot checked by means of a normal household scale.
1500 mm wire transducer (1500 mm = 10 Volt output) + Digital Multimeter
- Period:** 28 January 2019
- Result:** Appendix 3: Test results.
- Note:** -
- Storage:** The test material will be destroyed after 1 month, unless otherwise agreed.
- Terms:** The test has been performed according the general terms and conditions of The Danish Technological Institute. The results from DTI's work in this report, i.e. analyses, assessments and instructions may only be used or reported in their entirety. The customer may not mention or refer to DTI or DTI's employees for advertising or marketing purposes unless the DTI has granted its written consent in each case.
- Date/place:** 31-01-2019, Danish Technological Institute, Wood and Biomaterials, Taastrup

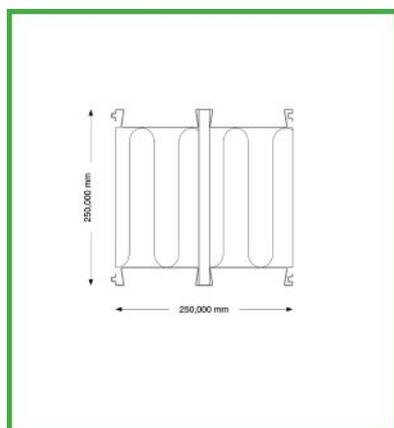
Signature: Test responsible

Co-signatory

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Materials

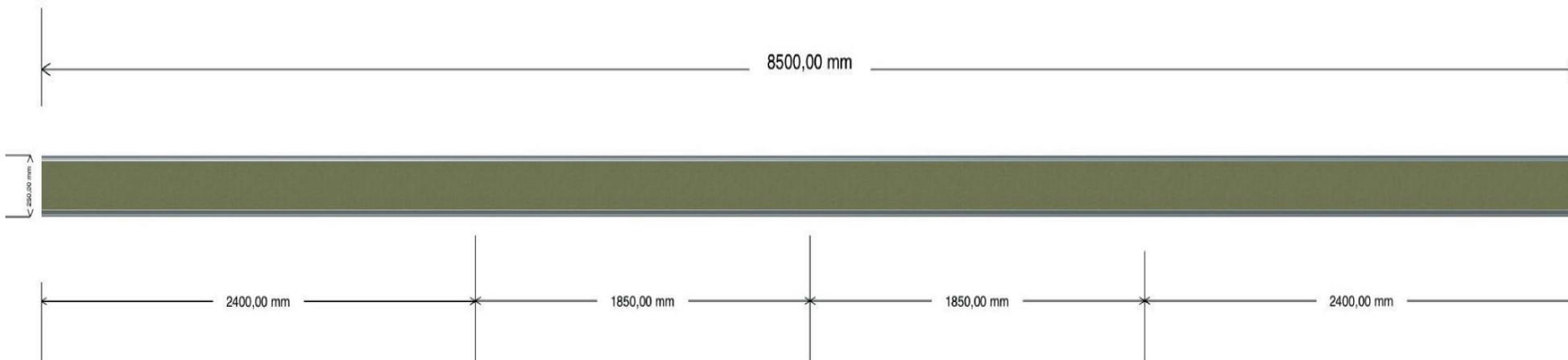
Material	Description
Steel plate Swallow tail profile	0,9 mm DX51 D + AZ 150 AS DX51 D = Standard steel, with tension strength 500 MPa AZ 150 AS = Surface treatment, AluZink minimum 150 g/m ² , Normal appearance (A), Anti Fingerprint surface (S)
Panel	15 mm MAGPLY Magnesium Oxide Board with glass fibre mesh webbing. One side smooth. White
Glue	Base: Kestopur PL 5 - 10 https://pim.kiilto.com/kiilto-pim-api/api/pdf/download/5b11bbaee4b08a98c0299467 Hardener: Profect 91102 http://pki.dk/handler/download/PT91102_DK_SDS.pdf
Insulation	Rockwool Flexibatts 34, density 42 kg
All descriptions are given by the assignor	



Cross section of one element

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Element & test set-up



Specimens for strength test: Element: L. 8500 x B. 500 x H. 250mm



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Element & test set-up

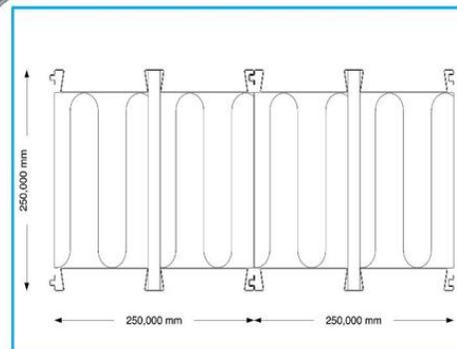
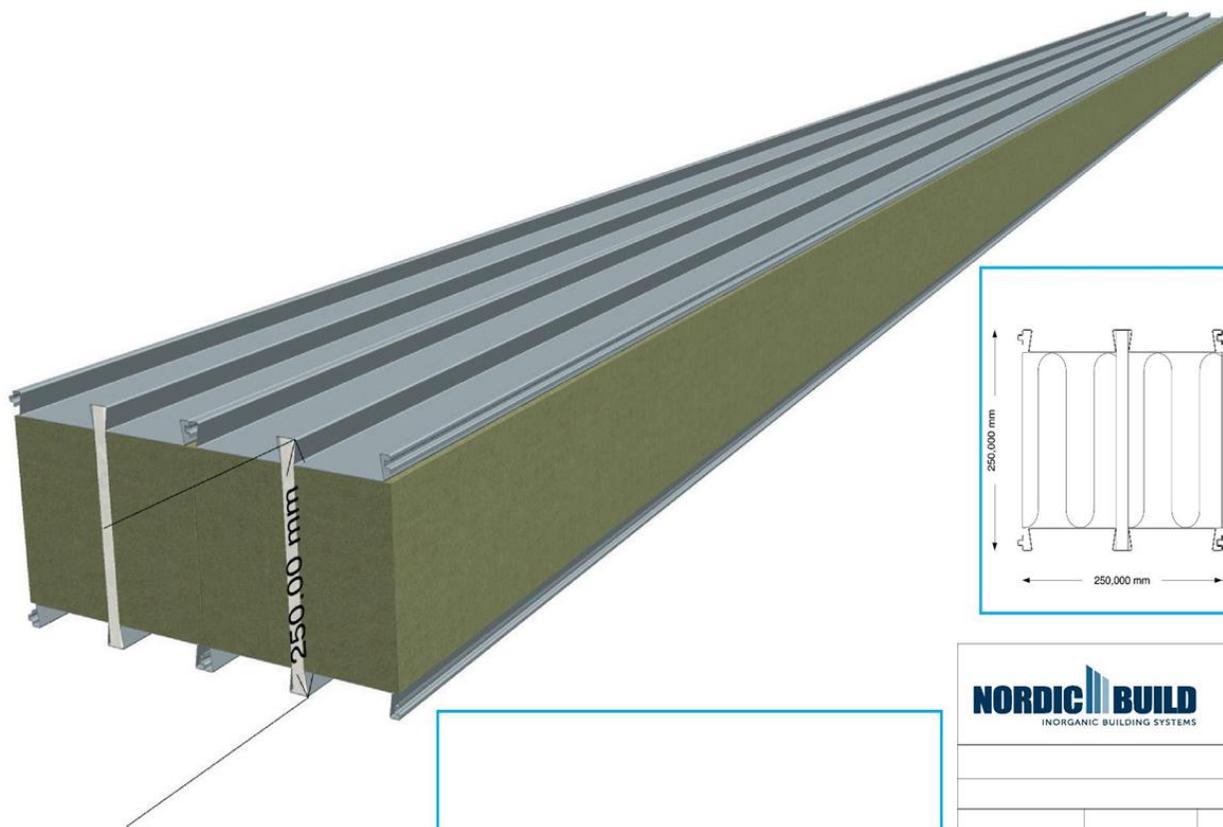


Deflection measuring equipment, located in the mid section of the beam/element.

Support with rollers.

Element & test set-up

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NORDIC BUILD INORGANIC BUILDING SYSTEMS		

Test results

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Span 8 m

Element width 500 mm (The width of 2 SIPS)

Element height 250 mm

Area 4 m²

Requirement, deflection flooring, 1/400 = 20 mm

Requirement, deflection roofing/ snow load, 1/250 mm = 34 mm

The element is loaded with 25 kg salt sacks. Three sacks per meter = 75 kg/m

Layers	No. of sacks/meter	Kg/m /m ²	Total weight /Kg	Deflection / mm
1	3	75 / 150	600	12,9
	4	100 / 200	800	17,3
2	6	150 / 300	1200	26,4
	7	175 / 350	1400	31,2
	8	200 / 400	1600	35,3
3	9	225 / 450	1800	40,7
	10	250 / 500	2000	45,6
4	12	300 / 600	2400	56 mm – after 20 min. 57,5 mm
	13	325 / 650	2600	62,9 mm - after 5 min. 64,5 mm
5	15	375 / 750	3000	Failure

Test results

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Loading with 5 sacks per meter beam



Loading with 9 sacks per meter beam



Loading with 12 sacks per meter beam

Test results

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Loading with 15 sacks per meter beam – failure - folding of top flange



Failure mode – folding of top flange

Test results

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Element 1, side 1



Element 2, side 1 or 2.



Element 1, side 2

Failures in shear panel – after removing the insulation material