

CERTIFICATE OF CONSTANCY OF PERFORMANCE

Issued by DBI Certification, notified body No. 2531.

In compliance with *Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011* (the Construction Products Regulation or CPR), this certificate applies to the construction product

Moramast

Scope: **Supports supplied for fixed vertical signs (ZA.2)**

The product fulfils the essential characteristic:

See Annex 1

Intended use: **Stock items (described by performance)**

Placed on the market under the name or trade mark of:

**Saferoad Daluiso A/S
Hvidkærvej 33 Odense SV 5250**

and produced in the manufacturing plant:

CPA30003

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standards

EN 12899-1:2007 : **Fixed, vertical road traffic signs - Part 1: Fixed signs**

under system 1 for the performance set out in this certificate are applied and that the performance of the construction product is assessed to remain constant.

The attached annexes form part of this certificate.

Date of issue: **2020-02-07**.

This certificate will remain valid as long as neither the harmonized standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly unless suspended or withdrawn by the notified product certification body.

(This certificate supersedes the previous version of this certificate issued 2017-11-24)

This certificate was first issued 2017-11-24.



Merete Poulsen
Responsible for evaluation



Allan Laursen
Responsible for certification decision

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Annex 1

EXTENT

Type	Description																																																																																																																																
Dimensions: 66 mm Moramast 110 mm Moramast 140 mm Moramast 166 mm Moramast Material: Aluminium AA6063 T66, Anodizing 20 µm Nature	Resistance to horizontal loads: <table><tr><th rowspan="2">Moramast Signposts without steel rods</th><th colspan="2">Bending</th><th colspan="2">Torsion</th></tr><tr><th>Stiffness (EI)</th><th>Moment capacity bendinging (Mu)</th><th>Stiffness (GIt)</th><th>Moment capacity torsion (Tu)</th></tr><tr><td>mm</td><td>kNm²</td><td>kNm</td><td>kNm²</td><td>kNm</td></tr><tr><td>66</td><td>25,2</td><td>2,2</td><td>16,9</td><td>2,0</td></tr><tr><td>110</td><td>133</td><td>6,4</td><td>70,3</td><td>5,1</td></tr><tr><td>140</td><td>291</td><td>11,0</td><td>156</td><td>8,8</td></tr><tr><td>166</td><td>543</td><td>17,5</td><td>304</td><td>14,9</td></tr></table> Performance under vehicle impact: Passive safety for supports with maximum heights 5,57 m above ground level and maximum area of sign to be mounted 5,4 m² on one support: <table><tr><td>Moramast Signpost without steel rods</td><td>66 mm</td><td>110 mm</td><td>140 mm</td><td>166 mm</td></tr><tr><td colspan="5">Performance classes according to EN 12767:2019</td></tr><tr><td>Speed class</td><td>100</td><td>100</td><td>100</td><td>100</td></tr><tr><td>Enegy absorbing category</td><td>NE</td><td>NE</td><td>NE</td><td>NE</td></tr><tr><td>Occupant safty class</td><td>C</td><td>C</td><td>C</td><td>C</td></tr><tr><td>Backfill type</td><td>S</td><td>S</td><td>S</td><td>S</td></tr><tr><td>Collapse mode</td><td>SE</td><td>SE</td><td>SE</td><td>SE</td></tr><tr><td>Direction class</td><td>SD</td><td>SD</td><td>SD</td><td>SD</td></tr><tr><td>Risk of roof indentation</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table> Lower edge of sign plate shall be at least 2.0 m above ground unless otherwise evaluated. Passive safety with maximum height more that 5.57 m above ground and no sign mounted: <table><tr><td>Moramast Signpost without steel rods</td><td>66 mm</td><td>110 mm</td><td>140 mm</td><td>166 mm</td></tr><tr><td colspan="5">Performance classes according to EN 12767:2019</td></tr><tr><td>Speed class</td><td>NPD</td><td>NPD</td><td>NPD</td><td>NPD</td></tr><tr><td>Enegy absorbing category</td><td>NPD</td><td>NPD</td><td>NPD</td><td>NPD</td></tr><tr><td>Occupant safty class</td><td>NPD</td><td>NPD</td><td>NPD</td><td>NPD</td></tr><tr><td>Backfill type</td><td>NPD</td><td>NPD</td><td>NPD</td><td>NPD</td></tr><tr><td>Collapse mode</td><td>NPD</td><td>NPD</td><td>NPD</td><td>NPD</td></tr><tr><td>Direction class</td><td>NPD</td><td>NPD</td><td>NPD</td><td>NPD</td></tr><tr><td>Risk of roof indentation</td><td>NPD</td><td>NPD</td><td>NPD</td><td>NPD</td></tr></table> Durability: <table><tr><td>Corrosion resistance (supports) Metal</td><td>SP1</td></tr><tr><td>Resistance to penetration of dust and water</td><td>Supports can not be provided with compartments for electrical equipment</td></tr></table>	Moramast Signposts without steel rods	Bending		Torsion		Stiffness (EI)	Moment capacity bendinging (Mu)	Stiffness (GIt)	Moment capacity torsion (Tu)	mm	kNm²	kNm	kNm²	kNm	66	25,2	2,2	16,9	2,0	110	133	6,4	70,3	5,1	140	291	11,0	156	8,8	166	543	17,5	304	14,9	Moramast Signpost without steel rods	66 mm	110 mm	140 mm	166 mm	Performance classes according to EN 12767:2019					Speed class	100	100	100	100	Enegy absorbing category	NE	NE	NE	NE	Occupant safty class	C	C	C	C	Backfill type	S	S	S	S	Collapse mode	SE	SE	SE	SE	Direction class	SD	SD	SD	SD	Risk of roof indentation	0	0	0	0	Moramast Signpost without steel rods	66 mm	110 mm	140 mm	166 mm	Performance classes according to EN 12767:2019					Speed class	NPD	NPD	NPD	NPD	Enegy absorbing category	NPD	NPD	NPD	NPD	Occupant safty class	NPD	NPD	NPD	NPD	Backfill type	NPD	NPD	NPD	NPD	Collapse mode	NPD	NPD	NPD	NPD	Direction class	NPD	NPD	NPD	NPD	Risk of roof indentation	NPD	NPD	NPD	NPD	Corrosion resistance (supports) Metal	SP1	Resistance to penetration of dust and water	Supports can not be provided with compartments for electrical equipment
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DBI Certification A/S

Jernholmen 12, 2650 Hvidovre
 Tlf.: 36 34 90 90

E-mail: info@dbicertification.dk
 www.dbicertification.dk

Annex 2

TEST DOCUMENTATION

Accredited Laboratory	Report no.	Date
Helsinki University of Technology Highway Engineering	H0925	2009-02-12
Helsinki University of Technology Highway Engineering	H0926	2009-02-12

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DBI Certification A/S

Jernholmen 12, 2650 Hvidovre
Tlf.: 36 34 90 90

E-mail: info@dbicertification.dk
www.dbicertification.dk

Annex 3

TECHNICAL BASIS

Title	Date
Saferoad Moramast Technical documentation Revision 01	November 2017
Daluiso/Mora Mast DA15114E	2017-08-21
Daluiso/Mora Mast DA15115E	2017-08-21
Daluiso/Mora Mast DA15116E	2017-09-12
Daluiso/Mora Mast DA15117A	2017-08-21
Translation of test reports for Moramast Sign post	2019-12-23

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DBI Certification A/S

Jernholmen 12, 2650 Hvidovre
Tlf.: 36 34 90 90

E-mail: info@dbicertification.dk
www.dbicertification.dk