

Certificate No.: 2531–CPR–CSC10027

Issue date: 2018-03-07



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

Gallows Type LG

Scope: Fixed vertical road traffic signs (ZA.6)

The product fulfils the essential characteristic:

See Annex 1

Intended use: Complete assemblies of fixed vertical road traffic signs.
The signs and gallows are intended for mounting at ground level

Placed on the market under the name or trade mark of:
Saferoad Daluiso A/S
Hvidkærvej 33
5250 Odense SV
Denmark

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: **2018-03-07**.

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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly unless suspended or withdrawn by the notified product certification body.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 was first issued 2018-03-07.

Handwritten signature of Per Lyster in blue ink.

Per Lyster
Responsible for evaluation

Handwritten signature of Allan Laursen in blue ink.

Allan Laursen
Responsible for certification decision

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DBI Certification A/S

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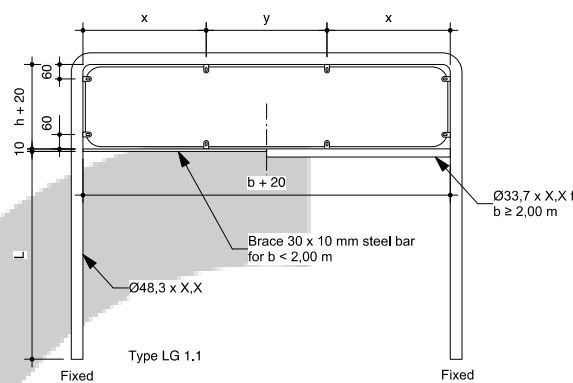
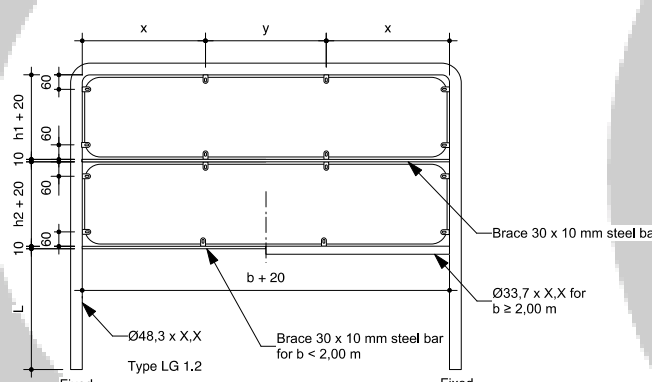
The logo for DANAK, featuring a red crown icon above the word 'DANAK' in red, with 'Prod. Reg. Nr. 7023' written below it.

Prod. Reg. Nr. 7023

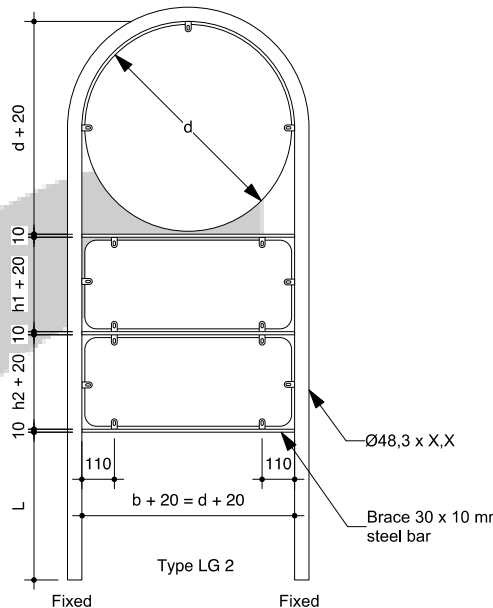
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Annex 1
EXTENT

Description and classification:

<p>Sign, sizes and mounting system Pipes: Minimum steel quality: S235 in dimension $\varnothing 33,7 \times 3,2$, $\varnothing 48,3 \times 2,9$, $\varnothing 48,3 \times 3,0$ and $\varnothing 48,3 \times 3,2$ mm Signboard: Minimum aluminium quality: $R_{p0,2} = 180$ MPa, min. 2 mm thickness</p>		<p>Classification according to wind load classes</p>																																																																																																																					
		Placed in WL1	Placed in WL2	Placed in WL3																																																																																																																			
 <p>Type LG 1.1</p>		<p>$h \leq 500$ mm, $b \leq 2500$ mm and $L \leq 500$ mm</p>																																																																																																																					
		<p>PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.</p>	<p>PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.</p>	<p>PAF1, WL3, DSL0, PLO, TDB3, P2, E1 and SP1.</p>																																																																																																																			
 <p>Type LG 1.2</p>		<p>$h1 \leq 330$ mm, $b \leq 1750$ mm and $L \leq 500 + h2 + 30$ mm</p>																																																																																																																					
		<p>PAF1, WL1, DSL0, PLO, TDB2, P2, E1 and SP1.</p>	<p>PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.</p>	<p>PAF1, WL3, DSL0, PLO, TDB3, P2, E1 and SP1.</p>																																																																																																																			
<table border="1"> <thead> <tr> <th rowspan="2">b</th> <th rowspan="2">Numbers of braces</th> <th colspan="7">Measures for braces</th> </tr> <tr> <th>←</th> <th>←</th> <th>←</th> <th>←</th> <th>←</th> <th>←</th> <th>←</th> </tr> </thead> <tbody> <tr> <td>1000</td> <td>2</td> <td>344</td> <td>332</td> <td>344</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1250</td> <td>2</td> <td>426</td> <td>418</td> <td>426</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1500</td> <td>2</td> <td>510</td> <td>500</td> <td>510</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1750</td> <td>2</td> <td>593</td> <td>584</td> <td>593</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2000</td> <td>2</td> <td>677</td> <td>666</td> <td>677</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2250</td> <td>4</td> <td>460</td> <td>450</td> <td>450</td> <td>450</td> <td>460</td> <td></td> <td></td> </tr> <tr> <td>2500</td> <td>4</td> <td>510</td> <td>500</td> <td>500</td> <td>500</td> <td>510</td> <td></td> <td></td> </tr> <tr> <td>2750</td> <td>4</td> <td>560</td> <td>550</td> <td>550</td> <td>550</td> <td>560</td> <td></td> <td></td> </tr> <tr> <td>3000</td> <td>5</td> <td>510</td> <td>500</td> <td>500</td> <td>500</td> <td>500</td> <td>510</td> <td></td> </tr> <tr> <td>3250</td> <td>6</td> <td>475</td> <td>464</td> <td>464</td> <td>464</td> <td>464</td> <td>464</td> <td>475</td> </tr> <tr> <td>3500</td> <td>6</td> <td>510</td> <td>500</td> <td>500</td> <td>500</td> <td>500</td> <td>500</td> <td>510</td> </tr> </tbody> </table>		b	Numbers of braces	Measures for braces							←	←	←	←	←	←	←	1000	2	344	332	344					1250	2	426	418	426					1500	2	510	500	510					1750	2	593	584	593					2000	2	677	666	677					2250	4	460	450	450	450	460			2500	4	510	500	500	500	510			2750	4	560	550	550	550	560			3000	5	510	500	500	500	500	510		3250	6	475	464	464	464	464	464	475	3500	6	510	500	500	500	500	500	510	<p>$h1 \leq 330$ mm, $h2 \leq 330$ mm, $b \leq 3000$ mm and $L \leq 500$ mm</p>		
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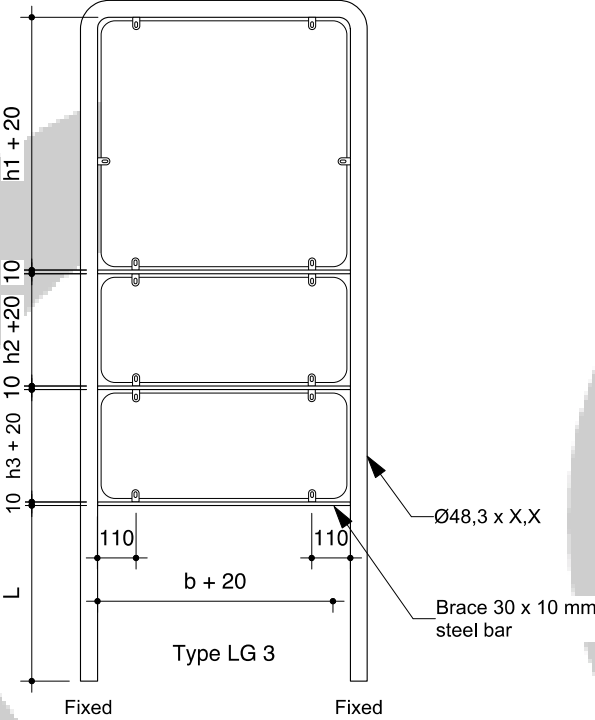
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<p align="center">Sign, sizes and mounting system</p> <p>Pipes: Minimum steel quality: S235 in dimension $\text{Ø}33,7 \times 3,2$, $\text{Ø}48,3 \times 2,9$, $\text{Ø}48,3 \times 3,0$ and $\text{Ø}48,3 \times 3,2$ mm Signboard: Minimum aluminium quality: $R_{p0,2} = 180$ MPa, min. 2 mm thickness</p>	<p align="center">Classification according to wind load classes</p>		
	Placed in WL1	Placed in WL2	Placed in WL3
	<p align="center">$d \leq 700$ mm and $L \leq h1 + h2 + 60 + 500$ m</p>		
	PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL3, DSL0, PLO, TDB3, P2, E1 and SP1.
	<p align="center">$d \leq 700$ mm, $h1 \leq 300$ mm and $L \leq h2 + 30 + 500$ m</p>		
	PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL3, DSL0, PLO, TDB3, P2, E1 and SP1.
	<p align="center">$d \leq 700$ mm, $h1 \leq 300$ mm, $h2 \leq 300$ mm and $L \leq 500$ m</p>		
PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL3, DSL0, PLO, TDB3, P2, E1 and SP1.	

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Sign, sizes and mounting system Pipes: Minimum steel quality: S235 in dimension $\varnothing 33,7 \times 3,2$, $\varnothing 48,3 \times 2,9$, $\varnothing 48,3 \times 3,0$ and $\varnothing 48,3 \times 3,2$ mm Signboard: Minimum aluminium quality: $R_{p0,2} = 180$ MPa, min. 2 mm thickness		Classification according to wind load classes		
		Placed in WL1	Placed in WL2	Placed in WL3
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		PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL3, DSL0, PLO, TDB4, P2, E1 and SP1.
		$h1 \leq 700$ mm, $h2 \leq 300$ mm, $b \leq 700$ mm and $L \leq h3 + 30 + 500$ m		
		PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL3, DSL0, PLO, TDB4, P2, E1 and SP1.
		$h1 \leq 700$ mm, $h2 \leq 300$ mm, $h3 \leq 300$ mm, $b \leq 700$ mm and $L \leq 500$ mm		
PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL3, DSL0, PLO, TDB4, P2, E1 and SP1.		
Resistance to horizontal loads		NPD		
Resistance to bending		NPD		
Resistance to torsion		NPD		
Fixings:		Pass. M6 Screws, nuts and washers M6: $f_y \geq 320$ MPa Pressure force for tightening: 2 kN		
Temporary deflection (supports) -bending -torsion		NPD		

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Permanent deflection		NDP
Performance under vehicle impact		NPD
Visibility		Value/description/ class/reference
Retroreflective signs: Daylight chromaticity & luminance factor	3M Advanced Engineering Grade Prismatic 7930	Pass, ETA 16/0006,
	3M High Intensity Prismatic 3930	Pass, ETA 13/0304
		Pass, ETA 11/0426,
		Pass, ETA 11/0427
	3M Engineering Grade Prismatic 3430	Pass, ETA 12/0550
		Pass, ETA 10/0118
	3M Diamond Grade DG	Pass, ETA 11/0522
	Pass, ETA 11/0521	
	Pass, ETA 13/0303	
Non retroreflective signs: Daylight chromaticity & luminance factor	3M Advanced Engineering Grade Prismatic 7930	NPD
	3M High Intensity Prismatic 3930	NPD
	3M Engineering Grade Prismatic 3430	NPD
	3M Diamond Grade DG	NPD

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Retroreflective signs: Coefficient of retroreflection R_A	3M Advanced Engineering Grade Prismatic 7930 3M High Intensity Prismatic 3930 3M Engineering Grade Prismatic 3430 3M Diamond Grade DG	ETA 16/0006 Class RA2, ETA 13/0304 Class RA2, ETA 11/0426 Class RA2, ETA 11/0427 Class RA1, ETA 12/0550 Class RA1, ETA 10/0118 Class RA1, RA2, ETA 11/0521 NPD, ETA 11/0522 NPD, ETA 13/0303
External illumination		Value/description /class
mean illuminance,		NPD
uniformity of illuminance		NPD
Durability		Value/description /class
Impact resistance Sign face material	3M Advanced Engineering Grade Prismatic 7930 3M High Intensity Prismatic 3930 3M Engineering Grade Prismatic 3430 3M Diamond Grade DG	Pass, ETA 16/0006 pass, ETA 13/0304 pass, ETA 11/0426 pass, ETA 11/0427 Pass, ETA 12/0550 Pass, ETA 10/0118 Pass, ETA 11/0521 Pass, ETA 11/0522 Pass, ETA 13/0303

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Resistance to weathering – sign face material: Retroreflective signs	3M Advanced Engineering Grade Prismatic 7930	Pass, ETA 16/0006
	3M High Intensity Prismatic 3930	Pass, ETA 13/0304
		Pass, ETA 11/0426
		Pass, ETA 11/0427
	3M Engineering Grade Prismatic 3430	Pass, ETA 12/0550
	3M Diamond Grade DG	Pass, ETA 10/0118
		Pass, ETA 11/0521
		Pass, ETA 11/0522
		Pass, ETA13/0303
Resistance to weatering – sign face material: Non retroreflective signs		NPD
Corrosion resistance		Value/description/class/reference
Steel pipes and fins		Minimum S235 SP1 The pipe and fins are after manufacturing hot dip galvanized to a minimum of 60µm
Screws, nuts and washers		M6: fy ≥ 320 MPa Stainless steel SP2 or anodized aluminum SP1
Aluminum plate		Minimum Rp0,2 ≥180 MPa SP1 Lacquered Al-plate on exposed side if any
Resistance to penetration of dust and water		NPD The product cannot be provided with compartments for electrical equipment

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Annex 2

TECHNICAL BASIS

File number	Title	Date
None	Saferoad Daluiso A/S Calculation of minor traffic signs (ITC) Shapes and sizes for signs mounted in gallows type LG, Revision 01	January 2018
	3M Advanced Engineer Grade Prismatic 7930: ETA 16/0006	2016-03-03
	3M High Intensity Prismatic 3930 ETA 13/0304 ETA 11/0426 ETA 11/0427	2013-06-27 2013-06-27 2013-06-27
	3M Engineering Grade Prismatic 3430: ETA 10/0118 ETA 12/0550	2016-02-10 2013-06-07
	3M Diamond Grade DG: ETA 11/0521 ETA 11/0522 ETA 13/0303	2013-06-27 2013-06-27 2013-06-27
	Addendum to Calculation of minor traffic signs (ITC) Shapes and Sizes for Signs Mounted in gallows Type LG 1 st . edition	December 2017

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