

Certificate No.: 2531–CPR–CSC10027

Issue date: 2018-11-21



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: **2018-11-21**.

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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly unless suspended or withdrawn by the notified product certification body.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 2018-05-02)

This certificate was first issued 2018-03-07.

Per Lyster
Responsible for evaluation

Merete Poulsen
Responsible for certification decision

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DBI Certification A/S

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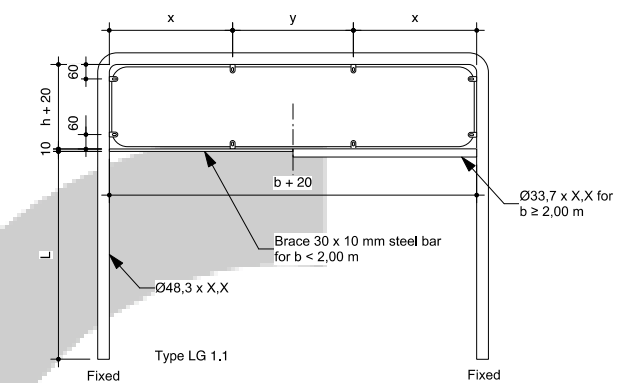
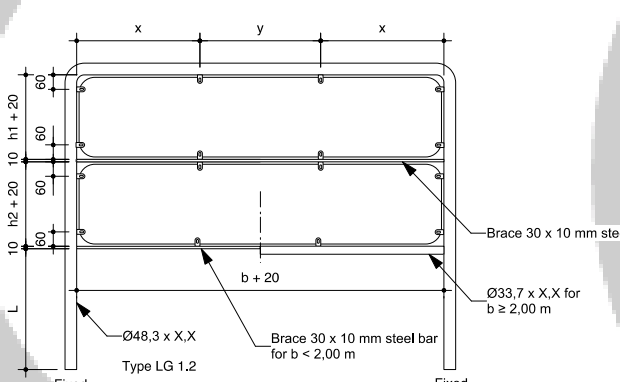


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Annex 1

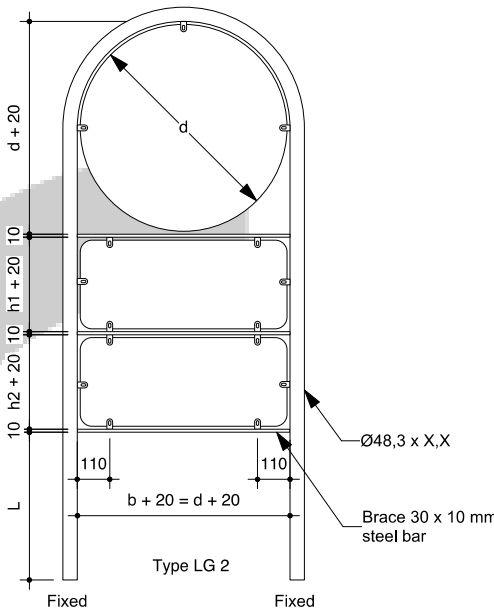
EXTENT

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>Type LG 1.2</p>		<p>$h1 \leq 330$ mm, $b \leq 1750$ mm and $L \leq 500 + h2 + 30$ mm</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>$h1 \leq 330$ mm, $h2 \leq 330$ mm and $L \leq 500 + h2 + 30$ mm</p>		
		PAF1, WL1, DSL0, PLO, TDB2, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL3, DSL0, PLO, TDB3, P2, E1 and SP1.
		<p>$h1 \leq 330$ mm, $h2 \leq 330$ mm, $b \leq 3000$ mm and $L \leq 500$ mm</p>		
		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.
		<p>$h1 \leq 330$ mm, $h2 \leq 330$ mm, $b \leq 3500$ mm and $L \leq 500$ mm</p>		
		PAF1, WL1, DSL0, PLO, TDB3, P2, E1 and SP1.	PAF1, WL2, DSL0, PLO, TDB4, P2, E1 and SP1.	X

b	Numbers of braces	Measures for braces							
		344	332	344					
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	

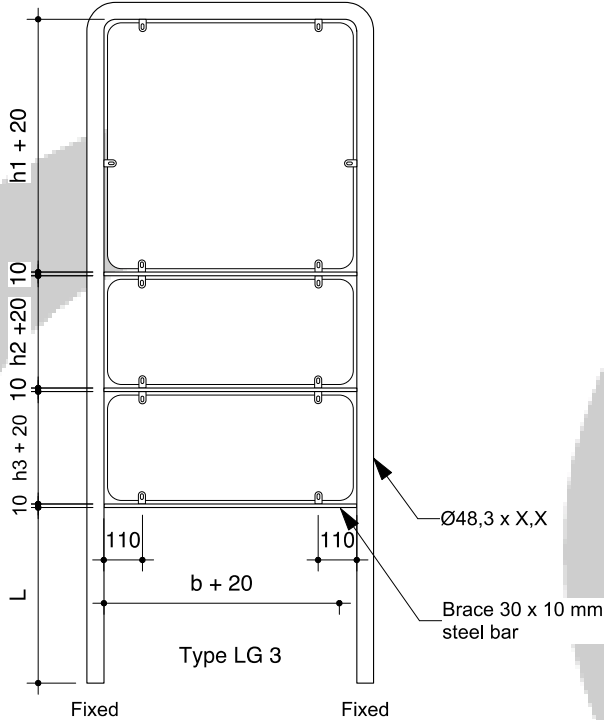
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<p align="center">Sign, sizes and mounting system</p> <p>Pipes: Minimum steel quality: S235 in dimension $\varnothing 33,7 \times 3,2$, $\varnothing 48,3 \times 2,9$, $\varnothing 48,3 \times 3,0$ and $\varnothing 48,3 \times 3,2$ mm Signboard: Minimum aluminium quality: $R_{p0,2} = 180$ MPa, min. 2 mm thickness</p>	<p 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 $L \leq h1 + h2 + 60 + 500$ mm</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 $L \leq h2 + 30 + 500$ mm</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 $L \leq 500$ mm</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
 <p>h1 + 20</p> <p>h1</p> <p>h2 + 20</p> <p>h2</p> <p>h3 + 20</p> <p>h3</p> <p>L</p> <p>110</p> <p>b + 20</p> <p>Type LG 3</p> <p>Fixed</p> <p>Fixed</p> <p>Ø48,3 x X,X</p> <p>Brace 30 x 10 mm steel bar</p>		$h1 \leq 700$ mm, $b \leq 700$ mm and $L \leq h2 + h3 + 60 + 500$ 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.
		$h1 \leq 700$ mm, $h2 \leq 300$ mm, $b \leq 700$ mm and $L \leq h3 + 30 + 500$ 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.
		$h1 \leq 700$ 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.		

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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
Permanent deflection		NPD
Performance under vehicle impact		NPD
Visibility		Value/description/ class/reference
Retroreflective signs: Daylight chromaticity & luminance factor	3M Advanced Engineering Grade Prismatic 7930 3M High Intensity Prismatic 3930 3M Engineering Grade Prismatic 3430 3M Diamond Grade DG	ETA 16/0006, ETA 17/0465 ETA 18/0290 ETA 12/0550 ETA 10/0118 ETA 18/0405
Non retroreflective signs: Daylight chromaticity & luminance factor		NPD
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, ETA 17/0465 ETA 18/0290 ETA 12/0550 ETA 10/0118 ETA 18/0405

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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	Pass ETA 16/0006 ETA 17/0465
	3M High Intensity Prismatic 3930	Pass, ETA 18/0290
	3M Engineering Grade Prismatic 3430	Pass, ETA 12/0550
	3M Diamond Grade DG	Pass, ETA 10/0118 Pass, ETA 18/0405
Resistance to weathering – sign face material: Retroreflective signs	3M Advanced Engineering Grade Prismatic 7930	ETA 16/0006, ETA 17/0465
	3M High Intensity Prismatic 3930	ETA 18/0290
	3M Engineering Grade Prismatic 3430	ETA 12/0550 ETA 10/0118
	3M Diamond Grade DG	ETA 18/0405
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: $f_y \geq 320$ MPa Stainless steel SP2 or anodized aluminum SP1

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Aluminum plate		Minimum Rp0,2 \geq 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 02	March 2018
	3M Advanced Engineer Grade Prismatic 7930: ETA 16/0006 ETA 17/0465	2016-03-03 2017-07-26
	3M High Intensity Prismatic 3930 ETA 18/0290	2018-06-21
	3M Engineering Grade Prismatic 3430: ETA 10/0118 ETA 12/0550	2016-02-10 2018-06-06
	3M Diamond Grade DG: ETA 18/0405	2018-06-21
	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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