GRÄNGES

DECLARATION OF PERFORMANCE

No. 17/2021

1. Unique identification code of the product-type:

Gränges_Konin_5052

2. Intended use or uses:

Intended for internal and external loaded construction elements of buildings.

3.Manufacturer:

Gränges Konin S.A., Bolesława Prusa 2 Street, 00-493 Warsaw, Poland

Correspondence address: Hutnicza 1 Street, 62-510 Konin, Poland

4. System or systems of assessment and verification of constancy of performance:

System 2+

5. Harmonized standard:

EN 15088: 2005

Notified body/ies:

Research and Certification Department „ZETOM" prof. F. Stauba in Katowice sp. z o.o., Notified Body number 1436

6. Declared performance: Sheet, plate and strip aluminum alloy EN AW-5052 cold rolled

<table>
<tr><th>Essential characteristics</th><th>Performance</th><th>Harmonized technical specification</th></tr>
<tr><td>Dimensional tolerances IDT EN 485-4</td><td>Thickness tolerances
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<tr><th colspan="2" rowspan="2">Specified thickness [mm]</th><th colspan="4">Thickness tolerances [mm]</th></tr>
<tr><th>Up to and including 1000mm</th><th>Over 1000mm up to and including 1250mm</th><th>Over 1250mm up to and including 1600mm</th><th>Over 1600mm up to and including 2000mm</th></tr>
<tr><th>Over</th><th>Up to and including</th><th>mm</th><th>mm</th><th>mm</th><th>mm</th></tr>
<tr><td>0,20</td><td>0,4</td><td>±0,02</td><td>±0,04</td><td>±0,05</td><td>-</td></tr>
<tr><td>0,4</td><td>0,5</td><td>±0,03</td><td>±0,04</td><td>±0,05</td><td>±0,06</td></tr>
<tr><td>0,5</td><td>0,6</td><td>±0,03</td><td>±0,05</td><td>±0,06</td><td>±0,07</td></tr>
<tr><td>0,6</td><td>0,8</td><td>±0,03</td><td>±0,06</td><td>±0,07</td><td>±0,08</td></tr>
<tr><td>0,8</td><td>1,0</td><td>±0,04</td><td>±0,06</td><td>±0,08</td><td>±0,09</td></tr>
<tr><td>1,0</td><td>1,2</td><td>±0,04</td><td>±0,07</td><td>±0,09</td><td>±0,10</td></tr>
<tr><td>1,2</td><td>1,5</td><td>±0,05</td><td>±0,09</td><td>±0,10</td><td>±0,11</td></tr>
<tr><td>1,5</td><td>1,8</td><td>±0,06</td><td>±0,10</td><td>±0,11</td><td>±0,12</td></tr>
<tr><td>1,8</td><td>2</td><td>±0,06</td><td>±0,11</td><td>±0,12</td><td>±0,14</td></tr>
<tr><td>2</td><td>2,5</td><td>±0,07</td><td>±0,12</td><td>±0,13</td><td>±0,15</td></tr>
<tr><td>2,5</td><td>3,0</td><td>±0,08</td><td>±0,13</td><td>±0,15</td><td>±0,17</td></tr>
<tr><td>3,0</td><td>3,5</td><td>±0,10</td><td>±0,15</td><td>±0,17</td><td>±0,18</td></tr>
<tr><td>3,5</td><td>4,0</td><td>±0,15</td><td>±0,20</td><td>±0,22</td><td>±0,23</td></tr>
<tr><td>4,0</td><td>5,0</td><td>±0,18</td><td>±0,22</td><td>±0,24</td><td>±0,25</td></tr>
<tr><td colspan="6">When measuring the thickness, a zone 10mm wide from the edges of the product shall be disregarded.</td></tr>
</table></td><td>EN 15088:2005</td></tr>
</table>

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Essential characteristics	Performance	Harmonized technical specification
Dimensional tolerances IDT EN 485-4		EN 15088:2005

Width tolerances for sheet and plate

Specified thickness [mm]		Width tolerance for specified width [mm]		
Over	Up to and including	Up to and including 500mm	Over 500mm up to and including 1250mm	Over 1250mm up to and including 2000mm
0,20	3,0	+1,5 0	+3 0	+4 0
3,0	6,0	+3 0	+4 0	+5 0
6,0	20	+4 0	+5 0	+5 0

Length tolerances for sheet and plate

Specified thickness [mm]		Length tolerance for specified length [mm]				
Over	Up to and including	Up to and including 1000mm	Over 1000mm up to and including 2000mm	Over 2000mm up to and including 3000mm	Over 3000mm up to and including 4000mm	Over 5000mm
0,20	3,0	+3 0	+4 0	+6 0	+8 0	+0,2% of specified length
3,0	6,0	+4 0	+6 0	+8 0	+10 0	
6,0	20	+6 0	+8 0	+10 0	+10 0	

Width tolerances for strip

Specified thickness [mm]		Width tolerance for specified width [mm]				
Over	Up to and including	Up to and . including 100mm	Over 100mm up to and including 300mm	Over 300mm up to and including 500mm	Over 500mm up to and including 1250mm	Over 1250mm up to and including 1650mm
0,20	0,6	+0,3 0	+0,4 0	+0,6 0	+1,5 0	+2,5 0
0,6	1,0	+0,3 0	+0,5 0	+1 0	+1,5 0	+2,5 0
1,0	2,0	+0,4 0	+0,7 0	+1,2 0	+2 0	+2,5 0
2,0	3,0	+1 0	+1 0	+1,5 0	+2 0	+2,5 0
3,0	5,0	-	+1,5 0	+2 0	+3 0	+3 0

Mechanical properties IDT EN 485-2

Temper	Specified thickness [mm]		Tensile strength Rm [MPa]		Yield strength $R_{p0,2}$ [MPa]		Elongation A50 mm [%]		Bend radius[a]	
	Over	Up to and including	min	max	min	max	min	max	180°	90°
O	0,2	0,5	170	215	65		12		0t	0t
	0,5	1,5	170	215	65		14		0t	0t
	1,5	3,0	170	215	65		16		0,5t	0,5t
	3,0	6,0	170	215	65		18			1,0t
	6,0	12,5	165	215	65		19			2,0t
	12,5	20,0	165	215	65			18		
H111	0,2	0,5	170	215	65		12		0t	0t
	0,5	1,5	170	215	65		14		0t	0t
	1,5	3,0	170	215	65		16		0,5t	0,5t
	3,0	6,0	170	215	65		18			1,0t
	6,0	12,5	165	215	65		19			2,0t
	12,5	20,0	165	215	65			18		
H12	0,2	0,5	210	260	160		4			
	0,5	1,5	210	260	160		5			
	1,5	3,0	210	260	160		6			
	3,0	6,0	210	260	160		8			
	6,0	12,5	210	260	160		10			
	12,5	20,0	210	260	160			9		

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Essential characteristics	Performance	Harmonized technical specification
Mechanical properties IDT EN 485-2	See table below	EN 15088:2005

Temper	Specified thickness [mm]		Tensile strength Rm [MPa]		Yield strength $R_{p0,2}$ [MPa]		Elongation A50 mm [%]		Bend radius	
	Over	Up to and including	min	max	min	max	min	max	180°	90°
H14	0,2	0,5	230	280	180		3			
	0,5	1,5	230	280	180		3			
	1,5	3,0	230	280	180		4			
	3,0	6,0	230	280	180		4			
	6,0	12,5	230	280	180		5			
	12,5	20,0	230	280	180			4		
H16	0,2	0,5	250	300	210		2			
	0,5	1,5	250	300	210		3			
	1,5	3,0	250	300	210		3			
	3,0	6,0	250	300	210		3			
H18	0,2	0,5	270		240		1			
	0,5	1,5	270		240		2			
	1,5	3,0	270		240		2			
H22	0,2	0,5	210	260	130		5		1,5t	0,5t
	0,5	1,5	210	260	130		6		1,5t	1,0t
	1,5	3,0	210	260	130		7		1,5t	1,5t
	3,0	6,0	210	260	130		10			1,5t
	6,0	12,5	210	260	130		12			2,5t
	12,5	20,0	210	260	130			12		
H32	0,2	0,5	210	260	130		5		1,5t	0,5t
	0,5	1,5	210	260	130		6		1,5t	1,0t
	1,5	3,0	210	260	130		7		1,5t	1,5t
	3,0	6,0	210	260	130		10			1,5t
	6,0	12,5	210	260	130		12			2,5t
	12,5	20,0	210	260	130			12		
H24	0,2	0,5	230	280	150		4		2,0t	0,5t
	0,5	1,5	230	280	150		5		2,0t	1,5t
	1,5	3,0	230	280	150		6		2,0t	2,0t
	3,0	6,0	230	280	150		7			2,5t
	6,0	12,5	230	280	150		9			3,0t
	12,5	20,0	230	280	150			9		
H34	0,2	0,5	230	280	150		4		2,0t	0,5t
	0,5	1,5	230	280	150		5		2,0t	1,5t
	1,5	3,0	230	280	150		6		2,0t	2,0t
	3,0	6,0	230	280	150		7			2,5t
	6,0	12,5	230	280	150		9			3,0t
	12,5	20,0	230	280	150			9		
H26	0,2	0,5	250	300	180		3			1,5t
	0,5	1,5	250	300	180		4			2,0t
	1,5	3,0	250	300	180		5			3,0t
	3,0	6,0	250	300	180		6			3,5t
H36	0,2	0,5	250	300	180		3			1,5t
	0,5	1,5	250	300	180		4			2,0t
	1,5	3,0	250	300	180		5			3,0t
	3,0	6,0	250	300	180		6			3,5t
H28	0,2	0,5	270		210		3			
	0,5	1,5	270		210		3			
	1,5	3,0	270		210		4			
H38	0,2	0,5	270		210		3			
	0,5	1,5	270		210		3			
	1,5	3,0	270		210		4			

Weldability IDT EN 1999-1-1	Class I

Bendability

Alloy	Temper				
	O H111	H12 H22 H32	H14 H24 H34	H16 H26 H36	H18 H28 H38
EN AW-5052	-	B2	B2	B2	B3

Essential characteristics	Performance	Harmonized technical specification
Fatigue strength	NPD	EN 15088:2005
Dangerous substances IDT EN 573-3	NO	
Durability rating IDT EN 1999-1-1	Class A	

The performance of the product identified above is in conformity with the declared performance/s. This declaration of performance is issued, an accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Paweł Rutecki
Director of Development and Investment

Konin, 13 April 2021

Director of Development & Investment

Paweł Rutecki