

Date 08/03/2024

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TEST REPORT

No. 1689/24

Concerning clay roofing tiles according to EN 1304:2013

Requested by **Tognana Industrie e Fornaci, SpA**

on **01/02/2024**

This test report consists of eight (8) pages

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- SAMPLE DESCRIPTION : Roofing tiles, ref. Marsigliese

- MANUFACTURER : Tognana Industrie e Fornaci, SpA

- SAMPLING DETAILS:

- Where : _____

- Responsible : _____

- Methodology : _____

- DATE OF RECEPTION IN LABORATORY : 01/02/2024

- TESTS PERFORMED:

- ☒ EN 1304 - Structural characteristics, fixing and marking
- ☒ EN 538 - Flexural strength
- ☒ EN 539-1 - Impermeability
- ☒ EN 539-2 - Frost resistance
- ☒ EN 1024 - Geometric characteristics

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EN 1304:2013 - Structural characteristics, fixing and marking

	Number of specimen																			
Structural faults	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cracks	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Break	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Loss of nib	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

	Number of specimen																			
Structural faults	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Cracks	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Break	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Loss of nib	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

	Number of specimen																			
Structural faults	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Cracks	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fissures	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Loss of nib	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

	Number of specimen																			
Structural faults	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Cracks	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Break	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Loss of nib	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

	Number of specimen																			
Structural faults	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Cracks	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Break	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Loss of nib	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Marking:

Manufacturer: Tognana Superroof since 1820 Treviso

Country of origin: Made In Italy CE

Date of production: 23 50

Test date : 02/02/2024

Os resultados apresentados neste trabalho referem-se apenas às amostras ensaiadas. Os resultados aplicam-se à amostra conforme rececionada. Não se assume qualquer responsabilidade relativa à exatidão da amostragem, a menos que seja efetuada sob a direta responsabilidade do CTCV. A reprodução deste trabalho é autorizada apenas na sua forma integral. Para qualquer reprodução será indispensável autorização do CTCV por escrito.

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EN 538:1994 - Flexural strength

Span of inferior rollers (mm)

280

Number of specimen	Flexural strength (kN)		
	Individual values	Mean	Minimum
1	2,50	2,20	1,85
2	2,46		
3	2,42		
4	2,05		
5	2,35		
6	2,58		
7	1,85		
8	1,91		
9	1,89		
10	1,97		

Test date : 09/02/2024

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EN 539-1:2005 - Impermeability (Method 2)

Number of specimen	X_i		IC_{xi}		IC_{xi} (mean)	Classification
	Individual values	Mean value	Individual values	Maximum		
1	20	20	0	0	0	Category 1
2	20		0			
3	20		0			
4	20		0			
5	20		0			
6	20		0			
7	20		0			
8	20		0			
9	20		0			
10	20		0			

Test date - 07/02/2024

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EN 539-2:2013 - Frost resistance

Number of specimen	Water content after soaking - W_u (%)
1	9,9
2	9,9
3	10,0
4	10,0
5	10,0
6	9,7

N° of cycles

150

Type od defects	Number of specimen									
	1	2	3	4	5	6	7	8	9	10
Pit	No	No	No	No	No	No	No	No	No	No
Hair crack	No	No	No	No	No	No	No	No	No	No
Nascent crack	No	No	No	No	No	No	No	No	No	No
Surface crack	No	No	No	No	No	No	No	No	No	No
Surface damage	No	No	No	No	No	No	No	No	No	No
Structural crack	No	No	No	No	No	No	No	No	No	No
Loss of ribs	No	No	No	No	No	No	No	No	No	No
Break	No	No	No	No	No	No	No	No	No	No
Delamination	No	No	No	No	No	No	No	No	No	No

Test date - 04/03/2024

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EN 1024:2012 - Geometric characteristics

INDIVIDUAL DIMENSIONS

	Results	
	Mean (mm)	d1 (%)
Length	412	-0,6
Width	240	-0,1

Declared values

Length	415
Width	240

d1 - deviation from the value declared by the manufacturer

COVER DIMENSIONS

	Results			
	Mean (mm)	Maximum (mm)	d2 (%)	d3 (%)
Length				
Width				

d2 - deviation of the average size relative to the value declared by the manufacturer

d3 - deviation of the maximum size relative to the value declared by the manufacturer

TWIST

	Deviation max. (mm)	Twist (%)
	hm	R
1	0,68	0,2
2	1,28	0,5
3	0,88	0,3
4	0,48	0,2
5	1,18	0,4
6	0,68	0,2
7	0,78	0,3
8	1,38	0,5
9	0,55	0,2
10	1,63	0,6
Mean		0,3

CAMBER

	Height difference (mm)	Camber (%)
	H	C
1	1,56	0,3
2	1,44	0,3
3	0,34	0,1
4	1,84	0,4
5	1,65	0,3
6	1,18	0,2
7	2,11	0,4
8	1,69	0,3
9	0,34	0,1
10	2,04	0,4
Mean		0,3

Test date - 05/02/2024

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Laboratory Technician:

Marco Oliveira



Head of Laboratory



Joaquim Valente de Almeida