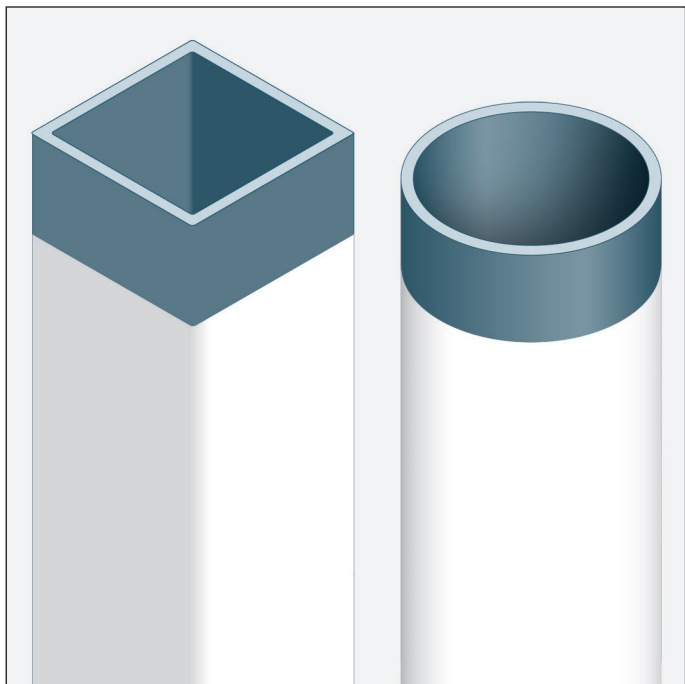


ELEMENTI IN ACCIAIO “CHIUSI”

**DESCRIZIONE DI CAPITOLATO**

Fornitura e posa in opera di protezione di pilastri o travi “chiusi” (tubolari) tondi o quadri in acciaio con resistenza al fuoco R 30/60/90/120 realizzata con vernice intumescente antincendio a base solvente F62 paint ONE previa applicazione di nastro adesivo in fibra di vetro largo 50 mm, in conformità all'ETA 20/1216 e secondo norma EN 13381-8.

RESISTENZA AL FUOCO: R30-120

- **Supporto:** pilastri o travi in acciaio “chiusi” (tubolari) tondi o quadri
- **Rivestimento protettivo:** pittura intumescente F62 paint ONE (vedi tabelle ETA 20/1216 in funzione della massività)
NOTA: è necessario applicare un nastro adesivo in fibra di vetro di larghezza 50 mm
- **Applicazione:** a spruzzo
- **Resa:** 1,75 kg/m² per 1000 µ di spessore
- **Preparazione del fondo:** in funzione delle caratteristiche di corrosività dell'ambiente (vedi schema pag. 52-53)
- **Finitura:** in funzione delle caratteristiche di corrosività dell'ambiente (vedi schema pag. 52-53)
Non necessaria ai fini della protezione antincendio

Rapporto di classificazione: ETA 20/1216
Norma di prova: EN 13381-8

La vernice sarà applicata a spruzzo in unica mano.
Non necessita di primer anticorrosivo per applicazioni interne.
In condizioni di esposizione C2 o superiori (ISO 12944-2) applicare gli specifici primer e protettivi (vedi schema pag. 52-53).
Per le modalità di applicazione si veda apposita scheda tecnica.

ELEMENTI IN ACCIAIO TUBOLARI “CHIUSI” RETTANGOLARI

Elementi in acciaio tubolari “chiusi”

Spessore minimo (in micron) di F62 paint “ONE” in funzione della temperatura critica $\theta_{a,cr}$ **R30**

Fattore di sezione (m ⁻¹)	TEMPERATURA CRITICA $\theta_{a,cr}$			
	350°C	500°C	550°C	650°C
50	965	965	965	965
55	965	965	965	965
60	965	965	965	965
65	965	965	965	965
70	965	965	965	965
75	965	965	965	965
80	1.021	965	965	965
85	1.113	965	965	965
90	1.206	965	965	965
95	1.298	965	965	965
100	1.391	965	965	965
105	1.483	965	965	965
110	1.576	965	965	965
115	1.669	965	965	965
120	1.761	965	965	965
125	1.854	965	965	965
130	1.946	965	965	965
135	2.039	965	965	965
140	2.131	965	965	965
145	2.216	965	965	965
150	2.275	965	965	965
155	2.334	965	965	965
160	2.394	965	965	965
165	2.453	965	965	965
170	2.512	965	965	965
175	2.571	965	965	965
180	2.630	965	965	965
185	2.690	965	965	965
190	2.749	965	965	965
195	2.808	986	0.965	965
200	2.867	1.006	0.965	965
205	2.926	1.027	0.965	965
210	2.986	1.048	0.965	965
215	3.045	1.069	0.965	965
220	3.104	1.090	0.965	965
225	3.163	1.111	0.965	965
230	3.222	1.132	0.965	965
235	3.281	1.153	0.981	965
240	3.341	1.174	0.998	965
245	3.400	1.194	1.016	965
250	3.459	1.215	1.033	965
255	3.518	1.236	1.051	965
260	3.577	1.257	1.069	965
265	3.637	1.278	1.086	965
270	3.690	1.299	1.104	965
275	3.755	1.320	1.121	965
280	3.814	1.341	1.139	965
285	3.873	1.362	1.157	965
290	3.932	1.383	1.174	965
295	3.992	1.403	1.192	965
300	4.044	1.424	1.209	965
305	4.094	1.445	1.227	965
310	4.145	1.466	1.245	965
315	4.195	1.487	1.262	965
320	4.246	1.508	1.280	965
325	4.296	1.529	1.297	970
330	4.347	1.550	1.315	980
335	4.397	1.571	1.333	991
340	4.448	1.592	1.350	1.002
345	4.499	1.612	1.368	1.013
350	4.549	1.633	1.386	1.024
355	4.600	1.654	1.403	1.035
360	4.650	1.675	1.421	1.046
365	4.701	1.696	1.438	1.057
370	4.751	1.717	1.456	1.067
375	4.802	1.738	1.474	1.078
380	4.852	1.759	1.491	1.089
385	4.903	1.780	1.509	1.100
390	4.953	1.800	1.526	1.111
395	5.004	1.821	1.544	1.122
400	5.054	1.842	1.562	1.133
405	5.105	1.863	1.579	1.144

R60

Fattore di sezione (m ⁻¹)	TEMPERATURA CRITICA $\theta_{a,cr}$			
	350°C	500°C	550°C	650°C
50	2.277	965	965	965
55	2.415	965	965	965
60	2.554	965	965	965
65	2.693	965	965	965
70	2.832	965	965	965
75	2.971	1.129	965	965
80	3.116	1.468	965	965
85	3.269	1.807	965	965
90	3.421	2.147	1.089	965
95	3.574	2.276	1.260	965
100	3.727	2.365	1.432	965
105	3.880	2.454	1.604	965
110	4.022	2.543	1.776	965
115	4.121	2.632	1.947	974
120	4.220	2.721	2.119	998
125	4.319	2.810	2.256	1.021
130	4.419	2.899	2.360	1.074
135	4.518	2.988	2.465	1.134
140	4.617	3.077	2.569	1.195
145	4.716	3.166	2.674	1.256
150	4.815	3.255	2.778	1.317
155	4.914	3.344	2.882	1.378
160	5.013	3.433	2.987	1.439
165	5.097	3.522	3.091	1.500
170	5.181	3.611	3.195	1.560
175	5.264	3.700	3.300	1.621
180	5.348	3.789	3.404	1.682
185	5.431	3.878	3.509	1.743
190	—	3.967	3.613	1.804
195	—	4.082	3.717	1.865
200	—	4.216	3.822	1.925
205	—	4.349	3.926	1.986
210	—	4.483	4.016	2.047
215	—	4.616	4.066	2.108
220	—	4.750	4.115	2.169
225	—	4.883	4.165	2.230
230	—	5.017	4.214	2.291
235	—	5.110	4.264	2.351
240	—	5.141	4.313	2.412
245	—	5.173	4.363	2.473
250	—	5.205	4.412	2.534
255	—	5.237	4.462	2.595
260	—	5.269	4.511	2.656
265	—	5.301	4.561	2.716
270	—	5.333	4.610	2.777
275	—	5.364	4.660	2.838
280	—	5.396	4.709	2.899
285	—	5.428	4.759	2.960
290	—	—	4.808	3.021
295	—	—	4.858	3.081
300	—	—	4.907	3.142
305	—	—	4.957	3.203
310	—	—	5.006	3.264
315	—	—	5.056	3.325
320	—	—	5.105	3.386
325	—	—	5.155	3.447
330	—	—	5.204	3.507
335	—	—	5.254	3.568
340	—	—	5.303	3.629
345	—	—	5.353	3.690
350	—	—	5.402	3.751
355	—	—	5.452	3.812
360	—	—	—	3.872
365	—	—	—	3.933
370	—	—	—	3.994
375	—	—	—	4.055
380	—	—	—	4.121
385	—	—	—	4.208
390	—	—	—	4.284
395	—	—	—	4.360
400	—	—	—	4.437
405	—	—	—	4.513

Lo spessore si riferisce al solo materiale intumescente.

I risultati sono riferiti alla presenza di nastro in fibra di vetro autoadesiva largo 50 mm.

I risultati sono applicabili anche alle colonne cave circolari.

ELEMENTI IN ACCIAIO TUBOLARI “CHIUSI” RETTANGOLARI

Elementi in acciaio tubolari “chiusi”

Spessore minimo (in micron) di F62 paint “ONE” in funzione della temperatura critica $\theta_{a,cr}$ **R90**

Fattore di sezione (m ⁻¹)	TEMPERATURA CRITICA $\theta_{a,cr}$			
	350°C	500°C	550°C	650°C
50	4.409	2.174	2.174	965
55	4.543	2.281	2.281	965
60	4.677	2.428	2.388	965
65	4.810	2.640	2.495	965
70	4.944	2.853	2.602	965
75	5.078	3.066	2.710	1.319
80	5.295	3.214	2.817	1.802
85	—	3.362	2.924	2.224
90	—	3.510	3.031	2.352
95	—	3.658	3.184	2.481
100	—	3.806	3.344	2.609
105	—	3.955	3.505	2.738
110	—	4.116	3.665	2.866
115	—	4.284	3.824	3.051
120	—	4.453	3.985	3.119
125	—	4.621	4.149	3.234
130	—	4.789	4.315	3.352
135	—	4.957	4.480	3.470
140	—	5.146	4.645	3.588
145	—	5.440	4.810	3.706
150	—	—	4.975	3.823
155	—	—	5.139	3.941
160	—	—	5.301	4.092
165	—	—	—	4.280
170	—	—	—	4.467
175	—	—	—	4.655
180	—	—	—	4.843
185	—	—	—	5.030
190	—	—	—	5.136
195	—	—	—	5.196
200	—	—	—	5.256
205	—	—	—	5.316
210	—	—	—	5.376
215	—	—	—	5.436
220	—	—	—	—
225	—	—	—	—
230	—	—	—	—
235	—	—	—	—
240	—	—	—	—
245	—	—	—	—
250	—	—	—	—
255	—	—	—	—
260	—	—	—	—
265	—	—	—	—
270	—	—	—	—
275	—	—	—	—
280	—	—	—	—
285	—	—	—	—
290	—	—	—	—
295	—	—	—	—
300	—	—	—	—
305	—	—	—	—
310	—	—	—	—
315	—	—	—	—
320	—	—	—	—
325	—	—	—	—
330	—	—	—	—
335	—	—	—	—
340	—	—	—	—
345	—	—	—	—
350	—	—	—	—
355	—	—	—	—
360	—	—	—	—
365	—	—	—	—
370	—	—	—	—
375	—	—	—	—
380	—	—	—	—
385	—	—	—	—
390	—	—	—	—
395	—	—	—	—
400	—	—	—	—
405	—	—	—	—

R120

Fattore di sezione (m ⁻¹)	TEMPERATURA CRITICA $\theta_{a,cr}$			
	350°C	500°C	550°C	650°C
50	—	3.925	2.059	1.804
55	—	4.091	2.397	2.066
60	—	4.257	3.045	2.329
65	—	4.423	4.067	2.591
70	—	4.589	4.225	2.854
75	—	4.754	4.384	3.117
80	—	4.920	4.543	3.245
85	—	5.086	4.701	3.374
90	—	5.435	4.860	3.502
95	—	—	5.018	3.631
100	—	—	5.260	3.759
105	—	—	—	3.888
110	—	—	—	4.023
115	—	—	—	4.217
120	—	—	—	4.411
125	—	—	—	4.606
130	—	—	—	4.800
135	—	—	—	4.994
140	—	—	—	5.299
145	—	—	—	—
150	—	—	—	—
155	—	—	—	—
160	—	—	—	—
165	—	—	—	—
170	—	—	—	—
175	—	—	—	—
180	—	—	—	—
185	—	—	—	—
190	—	—	—	—
195	—	—	—	—
200	—	—	—	—
205	—	—	—	—
210	—	—	—	—
215	—	—	—	—
220	—	—	—	—
225	—	—	—	—
230	—	—	—	—
235	—	—	—	—
240	—	—	—	—
245	—	—	—	—
250	—	—	—	—
255	—	—	—	—
260	—	—	—	—
265	—	—	—	—
270	—	—	—	—
275	—	—	—	—
280	—	—	—	—
285	—	—	—	—
290	—	—	—	—
295	—	—	—	—
300	—	—	—	—
305	—	—	—	—
310	—	—	—	—
315	—	—	—	—
320	—	—	—	—
325	—	—	—	—
330	—	—	—	—
335	—	—	—	—
340	—	—	—	—
345	—	—	—	—
350	—	—	—	—
355	—	—	—	—
360	—	—	—	—
365	—	—	—	—
370	—	—	—	—
375	—	—	—	—
380	—	—	—	—
385	—	—	—	—
390	—	—	—	—
395	—	—	—	—
400	—	—	—	—
405	—	—	—	—

Lo spessore si riferisce al solo materiale intumescente.

I risultati sono riferiti alla presenza di nastro in fibra di vetro autoadesiva largo 50 mm.

I risultati sono applicabili anche alle colonne cave circolari.

ELEMENTI IN ACCIAIO TUBOLARI “CHIUSI” TONDI

Elementi in acciaio tubolari “chiusi”
Spessore minimo (in micron) di F62 paint “ONE”
in funzione della temperatura critica $\theta_{a,cr}$

R30

Fattore di sezione (m ⁻¹)	TEMPERATURA CRITICA $\theta_{a,cr}$			
	350°C	500°C	550°C	650°C
40	520	520	520	520
45	568	520	520	520
50	705	520	520	520
55	842	520	520	520
60	979	520	520	520
65	1.117	520	520	520
70	1.254	520	520	520
75	1.372	520	520	520
80	1.491	520	520	520
85	1.609	520	520	520
90	1.728	520	520	520
95	1.846	520	520	520
100	1.965	520	520	520
105	2.053	520	520	520
110	2.095	520	520	520
115	2.138	520	520	520
120	2.181	598	520	520
125	2.224	643	520	520
130	2.267	688	520	520
135	2.309	733	520	520
140	2.352	778	520	520
145	2.395	823	520	520
150	2.438	868	539	520
155	2.481	913	569	520
160	2.524	958	598	520
165	2.566	1.002	628	520
170	2.609	1.047	657	520
175	2.652	1.092	687	520
180	2.695	1.137	716	520
185	2.738	1.182	746	520
190	2.781	1.227	775	520
195	2.823	1.292	805	520
200	2.866	1.388	834	520
205	2.929	1.483	864	520
210	2.952	1.579	893	520
215	2.995	1.675	923	520
220	3.037	1.770	952	520
225	3.080	1.866	982	520
230	3.123	1.961	1.011	520
235	3.166	2.038	1.041	520
240	3.209	2.052	1.070	526
245	3.252	2.065	1.100	547
250	3.294	2.079	1.129	568
255	3.337	2.093	1.159	589
260	3.380	2.106	1.188	610
265	3.423	2.120	1.218	631
270	3.466	2.133	1.248	652
275	3.508	2.147	1.342	673
280	3.549	2.160	1.454	693
285	3.590	2.174	1.566	714
290	3.632	2.188	1.678	735
295	3.673	2.201	1.790	756
300	3.714	2.215	1.903	777
305	3.755	2.228	2.015	798
310	3.797	2.242	2.044	819
315	3.838	2.256	2.056	840
320	3.879	2.269	2.067	861
325	3.921	2.283	2.078	882
330	3.962	2.296	2.089	903
335	4.003	2.310	2.101	924
340	4.044	2.324	2.112	945
345	4.086	2.337	2.123	966
350	4.127	2.351	2.135	987
355	4.168	2.364	2.146	1.008
360	4.210	2.378	2.157	1.029
365	4.251	2.392	2.169	1.050
370	4.292	2.405	2.180	1.071
375	4.333	2.419	2.191	1.092
380	4.375	2.432	2.202	1.113
385	4.416	2.446	2.214	1.134
390	4.457	2.460	2.225	1.155
395	4.498	2.473	2.236	1.176
400	4.540	2.487	2.248	1.197
405	4.581	2.500	2.259	1.218
410	4.622	2.514	2.270	1.239
415	4.664	2.528	2.282	1.278
420	4.705	2.541	2.293	1.363
425	4.746	2.555	2.304	1.449
430	4.787	2.568	2.315	1.535
435	4.829	2.582	2.327	1.620

Gli spessori si riferiscono al solo materiale intumescente.

ELEMENTI IN ACCIAIO TUBOLARI “CHIUSI” TONDI



R60

Fattore di sezione (m ²)	TEMPERATURA CRITICA $\theta_{a.cr}$			
	350°C	500°C	550°C	650°C
40	2.321	763	520	520
45	2.474	901	520	520
50	2.626	1.039	600	520
55	2.779	1.177	745	520
60	2.931	1.315	890	520
65	3.063	1.453	1.036	520
70	3.236	1.592	1.181	551
75	3.388	1.730	1.309	632
80	3.541	1.868	1.420	713
85	3.693	2.006	1.530	794
90	3.845	2.083	1.641	875
95	3.998	2.145	1.751	956
100	4.150	2.206	1.862	1.036
105	4.303	2.267	1.973	1.117
110	4.455	2.328	2.057	1.198
115	4.607	2.389	2.107	1.291
120	4.760	2.450	2.157	1.410
125	—	2.511	2.206	1.530
130	—	2.573	2.256	1.649
135	—	2.634	2.306	1.769
140	—	2.695	2.356	1.888
145	—	2.756	2.406	2.008
150	—	2.817	2.456	2.058
155	—	2.878	2.506	2.088
160	—	2.940	2.556	2.118
165	—	3.001	2.606	2.149
170	—	3.062	2.655	2.179
175	—	3.123	2.705	2.209
180	—	3.184	2.755	2.239
185	—	3.245	2.805	2.269
190	—	3.307	2.855	2.299
195	—	3.368	2.905	2.329
200	—	3.429	2.955	2.359
205	—	3.490	3.005	2.389
210	—	3.574	3.055	2.419
215	—	3.658	3.104	2.449
220	—	3.742	3.154	2.480
225	—	3.826	3.204	2.510
230	—	3.910	3.254	2.540
235	—	3.994	3.304	2.570
240	—	4.078	3.354	2.600
245	—	4.126	3.404	2.630
250	—	4.246	3.454	2.660
255	—	4.330	3.515	2.690
260	—	4.414	3.604	2.720
265	—	4.498	3.693	2.750
270	—	4.582	3.782	2.780
275	—	4.666	3.872	2.811
280	—	4.750	3.961	2.841
285	—	4.833	4.050	2.871
290	—	—	4.139	2.901
295	—	—	4.228	2.931
300	—	—	4.317	2.961
305	—	—	4.417	2.991
310	—	—	4.496	3.021
315	—	—	4.585	3.051
320	—	—	4.674	3.081
325	—	—	4.763	3.112
330	—	—	4.852	3.142
335	—	—	—	3.172
340	—	—	—	3.202
345	—	—	—	3.232
350	—	—	—	3.262
355	—	—	—	3.292
360	—	—	—	3.322
365	—	—	—	3.352
370	—	—	—	3.382
375	—	—	—	3.412
380	—	—	—	3.443
385	—	—	—	3.473
390	—	—	—	3.537
395	—	—	—	3.643
400	—	—	—	3.748
405	—	—	—	3.854
410	—	—	—	3.959
415	—	—	—	4.065
420	—	—	—	4.170
425	—	—	—	4.276
430	—	—	—	4.382
435	—	—	—	4.487

R90

Fattore di sezione (m ²)	TEMPERATURA CRITICA $\theta_{a.cr}$			
	350°C	500°C	550°C	650°C
40	—	2.194	1.813	1.062
45	—	2.408	1.991	1.265
50	—	2.621	2.169	1.468
55	—	2.835	2.348	1.672
60	—	3.049	2.526	1.875
65	—	3.262	2.704	2.058
70	—	3.476	2.883	2.166
75	—	3.716	3.061	2.275
80	—	3.959	3.239	2.383
85	—	4.202	3.418	2.491
90	—	4.444	3.632	2.599
95	—	4.687	3.870	2.708
100	—	—	4.108	2.816
105	—	—	4.347	2.924
110	—	—	4.585	3.032
115	—	—	4.824	3.141
120	—	—	—	3.249
125	—	—	—	3.357
130	—	—	—	3.465
135	—	—	—	3.665
140	—	—	—	3.889
145	—	—	—	4.114
150	—	—	—	4.339
155	—	—	—	4.564
160	—	—	—	4.789
165	—	—	—	—
170	—	—	—	—
175	—	—	—	—
180	—	—	—	—
185	—	—	—	—
190	—	—	—	—
195	—	—	—	—
200	—	—	—	—
205	—	—	—	—
210	—	—	—	—
215	—	—	—	—
220	—	—	—	—
225	—	—	—	—
230	—	—	—	—
235	—	—	—	—
240	—	—	—	—
245	—	—	—	—
250	—	—	—	—
255	—	—	—	—
260	—	—	—	—
265	—	—	—	—
270	—	—	—	—
275	—	—	—	—
280	—	—	—	—
285	—	—	—	—
290	—	—	—	—
295	—	—	—	—
300	—	—	—	—
305	—	—	—	—
310	—	—	—	—
315	—	—	—	—
320	—	—	—	—
325	—	—	—	—
330	—	—	—	—
335	—	—	—	—
340	—	—	—	—
345	—	—	—	—
350	—	—	—	—
355	—	—	—	—
360	—	—	—	—
365	—	—	—	—
370	—	—	—	—
375	—	—	—	—
380	—	—	—	—
385	—	—	—	—
390	—	—	—	—
395	—	—	—	—
400	—	—	—	—
405	—	—	—	—
410	—	—	—	—
415	—	—	—	—
420	—	—	—	—
425	—	—	—	—
430	—	—	—	—
435	—	—	—	—