

Fire Test Report

vaild for
MPR-Support Channels
41/41/2,5; 41/62/2,5
41/82/2,0; 41/124/2,5
1-Field System, acc. EN 1363-1

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TEST REPORT SHORT FORM

No. 210006292-4

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English version

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Validity: not limited

Subject matter: Extract of the test report no. 210006292-2 of 20 June 2013 of MPA NRW regarding the load-bearing capacity of MÜPRO MPC-support channels 41/41/2.5 loaded by centric tension as 1-field system made of galvanized steel in conjunction with threaded rods \geq M10, brackets, washers and nuts according to clause 1 when it is fire exposure according to DIN EN 1363-1.

Fire test: The MÜPRO MPR support channels have been exposed to fire according to DIN EN 1363-1 on 11 December 2012 in MPA NRW. Additionally, deformation measurements have been made on the MÜPRO MPR support channels during fire exposure.

Application: The required minimum distances for installations in the cavity of suspended, fire protection-related ceiling constructions between the top of the suspended ceiling and the bottom of the MÜPRO MPR support channels can be determined with the estimated deformation measurements carried out on the MÜPRO MPR support channels according to figure 1 and the specifications given in table 1 in clause 2 and 3.

This test report replaces the test report no. 210006292-4 dated 22 November 2013.

1 Fire resistance period

Fire resistance periods (=load-bearing capacity of the support channels in time-dependence) according to the test results listed in test report no. 210006292-2 of 20 June 2013 can be assigned to the MÜPRO MPR support channels which are manufactured as 1-field system in profile dimensions of 41/41/2.5 (made of galvanized steel). The MÜPRO MPR support channels were mounted to the ceiling with threaded rods \geq M10 in the resistance class \geq 4.6, washers and nuts \geq M10 (each made of galvanized steel).

1.1 Distances between the loads with symmetrically application of the load according to the details obtained from the above-mentioned test report

Load:	Distances between the loads:
2 single loads	$\frac{l_0 - 2e}{n - 1}$
3 single loads	
4 single loads	
5 single loads	
6 single loads	
7 single loads	
8 single loads	

l_0 =static span width, distance e =40 mm between ceiling fastening and endpoint of the single load

1.1.1 Table 1 / 1-field system (suspended) permitted load with single load

Designation	Fire resistance period			
	30 max. F [kN]	60 max. F [kN]	90 max. F [kN]	120 max. F [kN]
MÜPRO MPR-support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5 mounted with threaded rods \geq M 10, class of resistance \geq 4.6 Static span width \leq 920 mm	$\leq 1,500$	$\leq 1,000$		$\leq 0,800$

1.1.2 Table 2 / 1-field system (suspended) permitted load with uniformly distributed load

Fire resistance period	≤ 30 minutes			
Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5			
Fixing device	Fitting ≥ M10			
Mounting method	1-field system / uniformly distributed load			
Static span width ≤ [mm]	440	560	680	920
2 single loads at	≤ [kN]	1,88	1,67	1,51
3 single loads at		1,64	1,46	1,32
4 single loads at		1,41	1,25	1,13
5 single loads at			1,04	0,95
6 single loads at				0,76
7 single loads at				0,488
8 single loads at				0,325

1.1.3 Table 3 / 1-field system (suspended) permitted load with uniformly distributed load

Fire resistance period	≤ 60 minutes			
Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5			
Fixing device	Fitting ≥ M10			
Mounting method	1-field system / uniformly distributed load			
Static span width ≤ [mm]	440	560	680	920
2 single loads at	≤ [kN]	1,08	0,96	0,87
3 single loads at		0,95	0,84	0,76
4 single loads at		0,81	0,72	0,65
5 single loads at			0,60	0,55
6 single loads at				0,44
7 single loads at				0,282
8 single loads at				0,188

1.1.4 Table 4 / 1-field system (suspended) permitted load with uniformly distributed load

Fire resistance period	≤ 90 minutes			
Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5			
Fixing device	Fitting ≥ M10			
Mounting method	1-field system / uniformly distributed load			
Static span length ≤ [mm]	440	560	680	920
2 single loads at	≤ [kN]	0,87	0,77	0,70
3 single loads at		0,76	0,67	0,61
4 single loads at		0,65	0,58	0,52
5 single loads at			0,48	0,44
6 single loads at				0,35
7 single loads at				0,225
8 single loads at				0,150

1.1.5 Table 5 / 1-field system (suspended) permitted load with uniformly distributed load

Fire resistance period		≤ 120 minutes			
Mounting channel		MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5			
Fixing device		Fitting ≥ M10			
Mounting method		1-field system / uniformly distributed load			
Static span width	≤ [mm]	440	560	680	920
2 single loads at	≤ [kN]	0,72	0,64	0,58	0,500
3 single loads at		0,63	0,56	0,51	0,438
4 single loads at		0,54	0,48	0,44	0,375
5 single loads at			0,40	0,36	0,313
6 single loads at				0,29	0,250
7 single loads at					0,188
8 single loads at					0,125

1.1.6 Mounting

The mounting of the channel is to carry out with threaded rods ≥ M10, washers and nuts ≥ M10 in consideration of clause 1.

2 Minimum distances (a_{\min})

at MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5 in consideration of clause 1

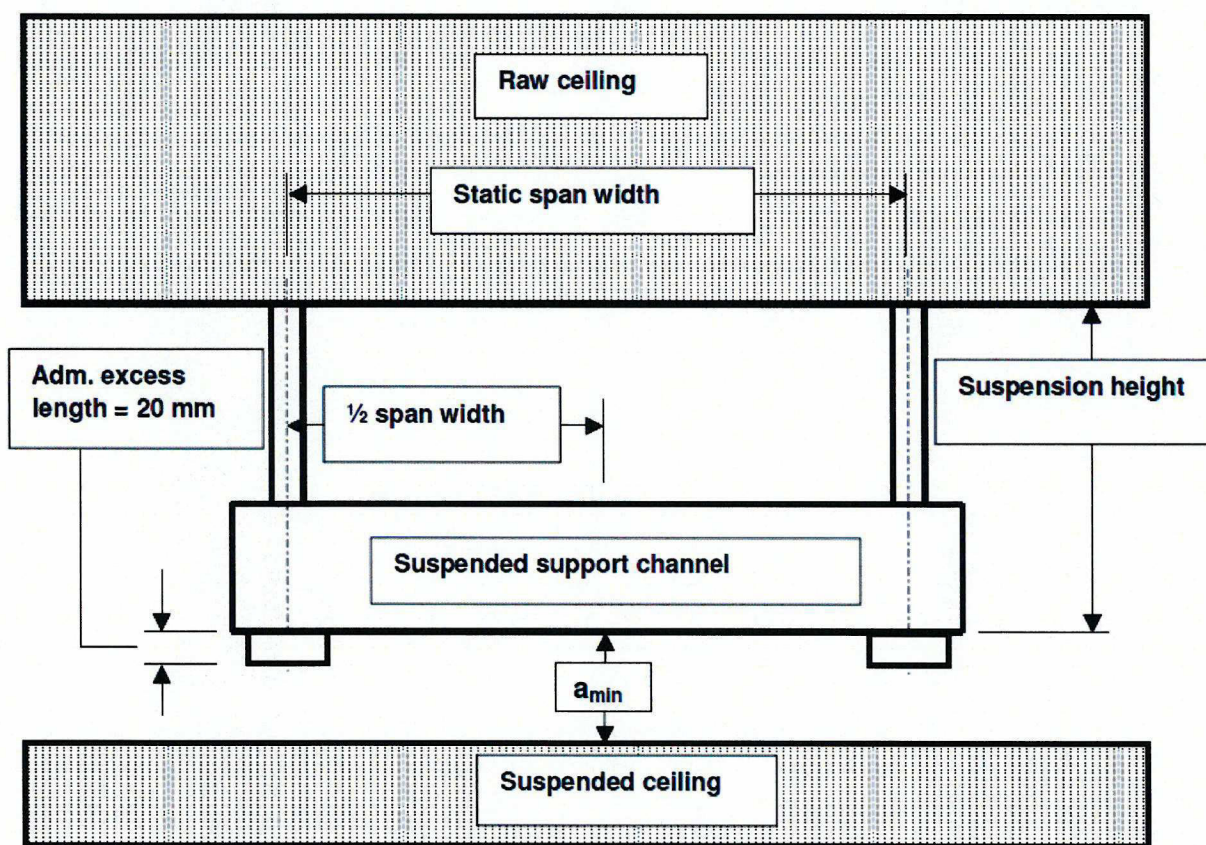
A minimum distance a_{\min} between the top of the ceiling and the bottom edge of the MÜPRO MPR support channels according to figure 1 mentioned below and the data in the tables given in clause 2 according to the test results of the fire tests is specified for suspended and directly mounted MÜPRO MPR support channels which are to be installed in the cavity of suspended, fire protection-related ceiling constructions. By adherence of the minimum distances a_{\min} the ceiling when it is exposed to fire is not influenced by temperature-caused length variations of the MÜPRO MPR support channels.

The minimum distances a_{\min} of the fire resistance periods are stated in the tables in clause 2. The specifications of the minimum distances a_{\min} include the excess length of the threaded rods of $u_1=20$ mm on the bottom of the channel. In case of larger excess lengths of the threaded rods the amount of u_2 minus u_1 ($u_2 = \text{excess length} \geq 20$ mm) has to be added to the minimum distances.

2.1 Figure 1

In figure 1 minimum distances a_{\min} for the cavity of suspended, fire protection-related ceiling constructions are shown which have to be taken into account dependent on the static span width and the excess length of the threaded rod u_2 below the channels.

The in the following tables given specifications of the minimum distances a_{\min} , each dependent on the fire resistance period, apply to the MÜPRO MPR support channels 41/41/2.5, 41/62/2.5, 41/82/2, 41/124/2,5 in conjunction with washers and nuts $\geq M10$ according to the test set-ups at the fire tests.



2.2 Table 6 / minimum distances a_{\min} 1-field system (suspended) with single load $\leq 1,500$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fitting $\geq M10$												
Mounting method	1-field system suspended / single load = 1,500 kN												
Static span width	$l \leq [\text{mm}]$	440			560			680			920		
Suspension height	$h \leq [\text{mm}]$	250	500	1.000	250	500	1.000	250	500	1.000	250	500	1.000
a_{\min} for fire res. period = 30 min	$h \leq [\text{mm}]$	247	252	262	313	318	328	379	384	394	379	394	404

2.3 Table 7 / minimum distances a_{min} 1-field system (directly fixed) with single load $\leq 1,500$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5				
Fixing device	Fitting \geq M10				
Mounting method	1-field system directly fixed / single load = 1,500 kN				
Static span width	$l \leq [\text{mm}]$	440	560	680	920
Suspension height	$h [\text{mm}]$	0			
a_{min} for fire res. period = 30 min.	$h \leq [\text{mm}]$	248	314	380	390

2.4 Table 8 / minimum distances a_{min} 1-field system (suspended) with single load $\leq 1,000$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system suspended / single load = 1,000 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	250	500	1.000	250	500	1.000	250	500	1.000	250	500	1.000
a _{min} for fire res. period = 30 min.	h ≤ [mm]	214	219	229	258	263	273	301	306	316	382	387	397
a _{min} for fire res. period = 60 min.		247	252	262	298	303	313	347	352	362	441	446	456
a _{min} for fire res. period = 90 min.		256	261	272	309	315	326	362	367	377	460	464	475

2.5 Table 9 / minimum distances a_{min} 1-field system (directly fixed) with single load $\leq 1,000$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5				
Fixing device	Fastening \geq M10				
Mounting method	1-field system directly fixed / single load = 1,000 kN				
Static span width	$l \leq [\text{mm}]$	440	560	680	920
Suspension height	$h [\text{mm}]$	0			
a_{min} for fire res. period = 30 min.	$h \leq [\text{mm}]$	219	263	306	387
a_{min} for fire res. period = 60 min.		254	305	354	448
a_{min} for fire res. period = 90 min.		265	319	370	468

2.6 Table 10 / minimum distances a_{min} 1-field system (suspended) with single load $\leq 0,800$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system suspended / single load = 0,800 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	250	500	1.000	250	500	1.000	250	500	1.000	250	500	1.000
a _{min} for fire res. period = 30 min.	h ≤ [mm]	211	216	226	255	260	270	297	302	312	377	382	392
a _{min} for fire res. period = 60 min.		224	229	239	271	276	286	316	321	331	401	406	416
a _{min} for fire res. period = 90 min.		231	236	247	279	285	296	327	332	342	415	419	430
a _{min} for fire res. period = 120 min.		239	245	256	289	295	306	339	344	354	430	434	445

2.7 Table 11 / minimum distances a_{min} 1-field system (directly fixed) with single load $\leq 0,800$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5				
Fixing device	Fastening \geq M10				
Mounting method	1-Feld-System directly fixed / single load = 0,800 kN				
Static span width	$l \leq [\text{mm}]$	440	560	680	920
suspension height	$h [\text{mm}]$	0			
a_{min} for fire res. period = 30 min.	$h \leq [\text{mm}]$	214	258	300	380
a_{min} for fire res. period = 60 min.		228	275	320	405
a_{min} for fire res. period = 90 min.		237	286	332	420
a_{min} for fire res. period = 120 min.		246	296	344	435

2.8 Table 12 / minimum distances a_{min} / for fire res. period = 30 min. 1-field system (suspended) with uniformly distributed load $\leq 0,325$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system suspended / uniformly distributed load = 0,325 kN												
Static span width	l ≤ [mm]	440			560			680			920		
suspension hight	h ≤ [mm]	250	500	1.000	250	500	1.000	250	500	1.000	250	500	1.000
2 single loads at	≤ [kN]	131	135	143	177	173	181	208	212	220	286	290	298
3 single loads at		137	141	149	186	182	190	219	223	231	300	304	312
4 single loads at		144	148	156	194	190	198	229	233	241	314	318	326
5 single loads at								239	243	251	328	332	340
6 single loads at											342	346	354
7 single loads at											356	360	368
8 single loads at											370	374	382

2.9 Table 13 / Minimum distances a_{min} / for fire res. period = 30 min. 1-field system (directly fixed) with uniformly distributed load $\leq 0,325$ kN

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system directly fixed / uniformly distributed load = 0,325 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	0											
2 single loads at	≤ [kN]	115	119	127	161	157	165	192	196	204	270	274	282
3 single loads at		121	125	133	170	166	174	203	207	215	284	288	296
4 single loads at		128	132	140	178	174	182	213	217	225	298	302	310
5 single loads at								223	227	235	312	316	324
6 single loads at											326	330	338
7 single loads at											340	344	352
8 single loads at											354	358	366

**2.10 Table 14 / Minimum distances a_{\min} / for fire res. period = 60 min.
1-field system (suspended) with uniformly distributed load
 $\leq 0,188$ kN**

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-Feld-Sytem suspended / uniformly distributed load = 0,188 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	250	500	1.000	250	500	1.000	250	500	1.000	250	500	1.000
2 single loads at	≤ [kN]	107	111	118	139	143	150	171	175	182	236	239	246
3 single loads at		113	116	123	146	150	157	180	183	190	247	251	258
4 single loads at		118	122	129	153	157	164	188	192	199	259	262	269
5 single loads at								197	200	207	270	274	281
6 single loads at											282	285	292
7 single loads at											293	297	304
8 single loads at											305	308	315

**2.11 Table 15 / Minimum distances a_{\min} / for fire res. period = 60 min.
1-field system (directly fixed) with uniformly distributed load
 $\leq 0,188$ kN**

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system directly fixed / uniformly distributed load = 0,188 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	0											
2 single loads at	≤ [kN]	93	97	104	125	129	136	157	161	168	222	225	232
3 single loads at		99	102	109	132	136	143	166	169	176	233	237	244
4 single loads at		104	108	115	139	143	150	174	178	185	245	248	255
5 single loads at								183	186	193	256	260	267
6 single loads at											268	271	278
7 single loads at											279	283	290
8 single loads at											291	294	301

**2.12 Table 16 / Minimum distances a_{\min} / for fire res. period = 90 min.
1-field system (suspended) with uniformly distributed load
 $\leq 0,150$ kN**

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system suspended / uniformly distributed load = 0,150 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	250	500	1.000	250	500	1.000	250	500	1.000	250	500	1.000
2 single loads at	≤ [kN]	96	100	108	125	129	137	154	158	166	213	217	225
3 single loads at		101	105	113	131	135	143	162	166	174	224	228	236
4 single loads at		106	110	118	138	142	150	170	174	182	234	238	246
5 single loads at								178	182	190	245	249	257
6 single loads at											256	260	268
7 single loads at											266	270	278
8 single loads at											277	281	289

**2.13 Table 17 / Minimum distances a_{\min} / for fire res. period = 90 min.
1-field system (directly fixed) with uniformly distributed load
 $\leq 0,150$ kN**

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system directly fixed / uniformly distributed load = 0,150 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	0											
2 single loads at	≤ [kN]	80	84	92	109	113	121	138	142	150	197	201	209
3 single loads at		85	89	97	115	119	127	146	150	158	208	212	220
4 single loads at		90	94	102	122	126	134	154	158	166	218	222	230
5 single loads at								162	166	174	229	233	241
6 single loads at											240	244	252
7 single loads at											250	254	262
8 single loads at											261	265	273

**2.14 Table 18 / Minimum distances a_{\min} / for fire res. period = 120 min.
1-field system (suspended) with uniformly distributed load
 $\leq 0,125$ kN**

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system suspended / uniformly distributed load = 0,125 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	250	500	1.000	250	500	1.000	250	500	1.000	250	500	1.000
2 single loads at	≤ [kN]	80	83	91	104	112	116	129	133	140	179	183	190
3 single loads at		84	88	95	110	117	121	136	140	147	188	192	199
4 single loads at		88	92	99	115	123	127	142	146	154	197	201	208
5 single loads at								149	153	160	206	210	217
6 single loads at											215	219	226
7 single loads at											224	228	235
8 single loads at											233	237	244

**2.15 Table 19 / Minimum distances a_{\min} / for fire res. period = 120 min.
1-field system (directly fixed) with uniformly distributed load
 $\leq 0,125$ kN**

Mounting channel	MÜPRO MPR support channel 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5												
Fixing device	Fastening ≥ M10												
Mounting method	1-field system directly fixed / uniformly distributed load = 0,125 kN												
Static span width	l ≤ [mm]	440			560			680			920		
Suspension height	h ≤ [mm]	0											
2 single loads at	≤ [kN]	64	67	75	88	96	100	113	117	124	163	167	174
3 single loads at		68	72	79	94	101	105	120	124	131	172	176	183
4 single loads at		72	76	83	99	107	111	126	130	138	181	185	192
5 single loads at								133	137	144	190	194	201
6 single loads at											199	203	210
7 single loads at											208	212	219
8 single loads at											217	221	228

3 Admissible loads

on MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5 which are mounted to the ceiling by defined minimum distances (a_{\min}) of 75 mm to 150 mm in due consideration of clause 1

3.1 Table 20 / Fire resistance period of 30 minutes single load / a_{\min} in mm

Mounting channel		MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5															
Fixing device		Fastening ³ M10															
Mounting method		1-field system / single load															
Static span width	≤ [mm]	440				560				680				920			
Single load for fire res. period = 30 min.	≤ kN	0,16	0,20	0,24	0,25	0,21	0,25	0,30	0,32	0,25	0,30	0,36	0,44	0,28	0,38	0,47	0,59
a_{\min}		75	100	125	150	75	100	125	150	75	100	125	150	75	100	125	150

3.2 Table 21 / Fire resistance period of 30 to 90 minutes single load / a_{\min} in mm

Mounting channel		MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5															
Fixing device		Fastening ³ M10															
Mounting method		1-field system / single load															
Static span width	≤ [mm]	440				560				680				920			
Single load for fire res. period = 30 min.	≤ kN	0,09	0,11	0,14	0,17	0,11	0,15	0,18	0,22	0,15	0,20	0,25	0,30	0,20	0,27	0,33	0,40
Single load for fire res. period = 60 min.		0,07	0,10	0,12	0,15	0,09	0,12	0,15	0,19	0,13	0,17	0,21	0,25	0,17	0,23	0,28	0,34
Single load for fire res. period = 90 min.		0,07	0,09	0,11	0,14	0,09	0,12	0,15	0,17	0,12	0,16	0,20	0,24	0,16	0,21	0,27	0,32
a_{\min}		75	100	125	150	75	100	125	150	75	100	125	150	75	100	125	150

3.3 Table 22 / Fire resistance period of 30 to 120 minutes single load / a_{\min} in mm

Mounting channel		MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5															
Fixing device		Fastening ³ M10															
Mounting method		1-field system / single load															
Static span width	≤ [mm]	440				560				680				920			
Single load for fire res. period = 30 min.	≤ kN	0,07	0,09	0,11	0,14	0,09	0,12	0,15	0,17	0,12	0,16	0,20	0,24	0,16	0,21	0,27	0,32
Single load for fire res. period = 60 min.		0,06	0,09	0,11	0,13	0,08	0,11	0,14	0,16	0,11	0,15	0,18	0,22	0,15	0,20	0,25	0,30
Single load for fire res. period = 90 min.		0,06	0,08	0,10	0,12	0,08	0,11	0,13	0,16	0,11	0,14	0,18	0,21	0,15	0,19	0,24	0,29
Single load for fire res. period = 120 min.		0,06	0,08	0,10	0,12	0,08	0,10	0,13	0,15	0,10	0,14	0,17	0,21	0,14	0,19	0,23	0,28
a_{\min}		75	100	125	150	75	100	125	150	75	100	125	150	75	100	125	150

3.4 Table 23 / Fire resistance period of 30 minutes uniformly distributed load / a_{min} in mm

Mounting channel		MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5															
Fixing device		Fastening \geq M10															
Mounting method		1-Feld-System / uniformly distributed load															
Static span width	\leq [mm]	440				560				680				920			
2 single loads at	\leq kN	0,14	0,17	0,20	0,22	0,18	0,22	0,26	0,28	0,22	0,26	0,31	0,38	0,26	0,34	0,43	0,51
3 single loads at		0,12	0,15	0,18	0,21	0,16	0,19	0,23	0,27	0,19	0,23	0,28	0,33	0,22	0,30	0,37	0,45
4 single loads at		0,11	0,13	0,15	0,18	0,14	0,16	0,19	0,23	0,16	0,20	0,24	0,28	0,19	0,26	0,32	0,38
5 single loads at						0,11	0,14	0,16	0,19	0,14	0,16	0,20	0,24	0,16	0,21	0,27	0,32
6 single loads at										0,11	0,13	0,16	0,19	0,13	0,17	0,21	0,26
7 single loads at														0,10	0,13	0,16	0,19
8 single loads at														0,07	0,09	0,11	0,13
a_{min}		75	100	125	150	75	100	125	150	75	100	125	150	75	100	125	150

3.5 Table 24 / Fire resistance period of 30 to 90 minutes uniformly distributed load / a_{min} in mm

Mounting channel		MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5															
Fixing device		Fastening \geq M10															
Mounting method		1-Feld-System / uniformly distributed load															
Static span width	\leq [mm]	440				560				680				920			
2 single loads at	\leq kN	0,08	0,10	0,13	0,15	0,10	0,13	0,16	0,19	0,11	0,15	0,19	0,23	0,16	0,21	0,26	0,31
3 single loads at		0,07	0,09	0,11	0,13	0,08	0,11	0,14	0,17	0,10	0,13	0,17	0,20	0,14	0,18	0,23	0,27
4 single loads at		0,06	0,08	0,09	0,11	0,07	0,10	0,12	0,14	0,09	0,11	0,14	0,17	0,12	0,16	0,19	0,23
5 single loads at						0,06	0,08	0,10	0,12	0,07	0,10	0,12	0,14	0,10	0,13	0,16	0,19
6 single loads at										0,06	0,08	0,10	0,11	0,08	0,10	0,13	0,16
7 single loads at														0,06	0,08	0,10	0,12
8 single loads at														0,04	0,05	0,07	0,08
a_{min}		75	100	125	150	75	100	125	150	75	100	125	150	75	100	125	150

3.6 Table 25 / Fire resistance period of 30 to 120 minutes uniformly distributed load / a_{min} in mm

Mounting channel		MÜPRO MPR support channels 41/41/2,5, 41/62/2,5, 41/82/2, 41/124/2,5															
Fixing device		Fastening \geq M10															
Mounting method		1-Feld-System / uniformly distributed load															
Static span width	\leq [mm]	440				560				680				920			
2 single loads at	\leq kN	0,07	0,10	0,12	0,15	0,09	0,13	0,16	0,19	0,11	0,15	0,19	0,23	0,16	0,21	0,26	0,31
3 single loads at		0,06	0,09	0,11	0,13	0,08	0,11	0,14	0,17	0,10	0,13	0,17	0,20	0,14	0,18	0,23	0,27
4 single loads at		0,06	0,07	0,09	0,11	0,07	0,09	0,12	0,14	0,09	0,11	0,14	0,17	0,12	0,15	0,19	0,23
5 single loads at						0,06	0,08	0,10	0,12	0,07	0,10	0,12	0,14	0,10	0,13	0,16	0,19
6 single loads at										0,06	0,08	0,10	0,11	0,08	0,10	0,13	0,15
7 single loads at														0,06	0,08	0,10	0,12
8 single loads at														0,04	0,05	0,06	0,08
a_{min}		75	100	125	150	75	100	125	150	75	100	125	150	75	100	125	150

4 Special information

4.1 Support channels

Fire resistance periods according to the details specified in clause 1 have been verified for MÜPRO MPR support channels with profile dimensions of 41/41/2.5. The assessment of the MÜPRO MPR support channels is only valid in conjunction with building elements which have at least the same fire resistance period as the MÜPRO MPR support channels.

4.2 Application in the cavity of suspended ceilings

A minimum distance a_{\min} , each, is defined between the top of the ceiling and the bottom of the MÜPRO MPR support channels according to figure 1 and the specifications given in the tables in clause 2 and 3 when using MÜPRO MPR support channels with fastenings \geq M10 according to clause 1 in the cavity of suspended ceiling constructions with fire resistance classification.

By compliance with the minimum distances a_{\min} the ceiling construction when it is exposed to fire is not influenced due to the temperature-caused, vertical deformations.

When applying MÜPRO pipe clamps or other construction elements tested with fire exposure according to DIN 4102-2; 1977-09 and DIN EN 1363-1, respectively, to the bottom of the above-mentioned MÜPRO support channels, the sum of the single deformations which results from the deformations of the MÜPRO MPR support channels, the MÜPRO pipe clamps and other construction elements is binding as minimum distance a_{\min} .

4.3 Cable systems

It has to be verified by fire tests if the MÜPRO MPR support channels are suitable for cable systems for which the functionality according to DIN 4102-12: 1998-11 is required.

4.4 Application, non-combustible pipes

Fire resistance periods were verified according to the performed fire test for the MÜPRO MPR support channels.

There are no objections concerning fire safety against the mounting of MÜPRO pipe clamps for fixing of non-combustible pipes onto the top of the channels.

The specifications given in clause 4.2 have to be taken into account when mounting the MÜPRO pipe clamps on the bottom of the MÜPRO MPR support channels.

4.5 Application, combustible pipes

The fire resistance periods according to clause 1 of MÜPRO MPR support channels are only given for attachment of combustible pipes with an outer diameter of ≤ 160 mm by MÜPRO pipe clamps on fire safety channel tops, if the pipes are additionally protected over the total length with non-combustible pipe shells with the appropriate fire resistance classification on basis of „allgemeiner bauaufsichtlicher Prüfzeugnisse“.

The specifications given in clause 4.2 have to be taken into account when the MÜPRO pipe clamps are mounted to the bottoms of the MÜPRO MPR support channels.

4.6 Material of MÜPRO MPR support channels

There are no objections concerning fire safety against the application of MÜPRO MPR support channels when they are alternatively made of stainless steel in the quality A2 or A4

4.7 Section dimensions

The assessments given in this test report are valid for MÜPRO MPR support channels in sizes of 41/41/2.5, 41/62/2.5, 41/82/2, 41/124/2.5.

4.8 Validity

The validity of this test report is not limited.

This test report written in English language is additionally issued to the German test report with the same report number. In case of doubt the German version is solely valid.

Erwitte, 19 September 2014

On behalf


Dipl.-Ing. H. Kötter
Person responsible



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