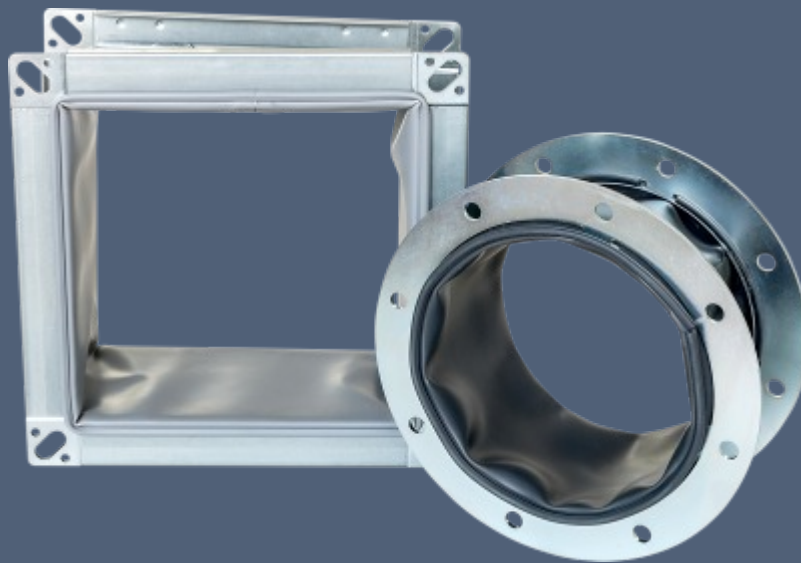


MANDÍK[®]

BREAKAWAY JOINT SQUARE AND ROUND FFDM



These Technical Specifications specify a number of manufactured sizes and designs of FFDM breakaway joints (hereinafter the pads only). They apply to production, design, ordering, delivery, assembly, and operation.

I. LIST OF CONTENTS

II. GENERAL	3
1. Description.....	3
2. Design.....	3
3. Installation and location.....	3
4. Dimensions and weights.....	4
III. ORDERING INFORMATION	8
5. Order key.....	8
IV. PACKAGING, TRANSPORT, ACCEPTANCE, STORAGE AND WARRANTY	9
6. Logistic data.....	9
7. Warranty.....	9

II. GENERAL

1. Description

- 1.1. The breakaway joints (hereinafter the connectors only) are used to allow the collapse of the ductwork in the event of a fire without disturbing the integrity of the fire damper. In a fire condition the plastic section of the pad will melt away ensuring the weight of the ductwork does not have an adverse effect on the damper assembly. Breakaway joints should be used alongside fire dampers as recommended in DW/145.
- 1.2. The connectors comply with the working conditions of air ducts of Group I and temperature from -10°C to 80°C.
- 1.3. The pads are designed for ducts with the maximum pressure to 1500 Pa.
- 1.4. The class of tightness through the breakaway joint body is ATC 2.
- 1.5. The connectors are designed for a weather-protected environment with the weather classification of class 3K5, without condensation, icing, ice formation and without water from sources other than rain, in accordance with EN 60 721-3-3 mod. A2.
- 1.6. The connectors are designed for air masses without any abrasive, chemical, and sticky additives.
- 1.7. All the dimensions and weights, unless stated otherwise, are in mm and kg.

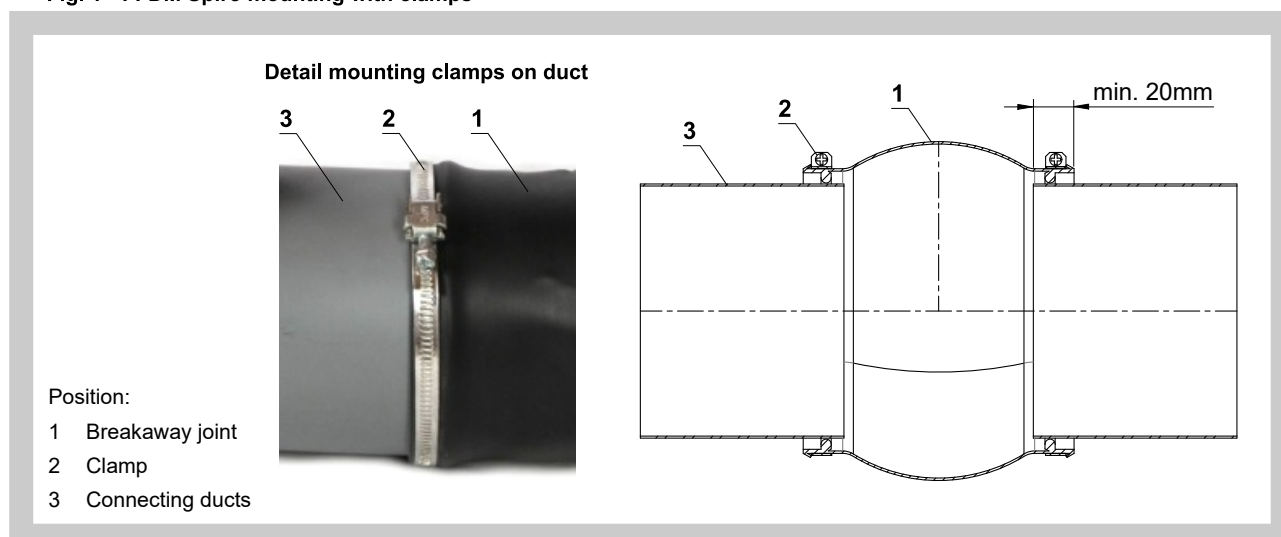
2. Design

- 2.1. The pad assembly consists of a pair of galvanized or stainless steel (AISI 304) sheet flanges connected by flexible sleeves of special softened polyester / PVC. The sleeves are available for up to 80°C with its certification for fire dampers (tested to DIN 4102-1). Breakaway joints are available with 105 mm and 155 mm pad lengths.
- 2.2. The square connector flanges are 30 mm wide, featuring holes in the corners.
- 2.3. The round connectors feature their connecting flange dimensions per EN 12 0505. We supply versions without flanges to Spiro as well.

3. Installation and location

- 3.1. The Breakaway joints are designed for installation into HVAC ducts. Our joints operate in any position.
- 3.2. When assembled with any other HVAC parts, the flexible connector must not be stretched.

Fig. 1 FFDM Spiro mounting with clamps



4. Dimensions and weights

Fig. 2 Breakaway Joint - Square

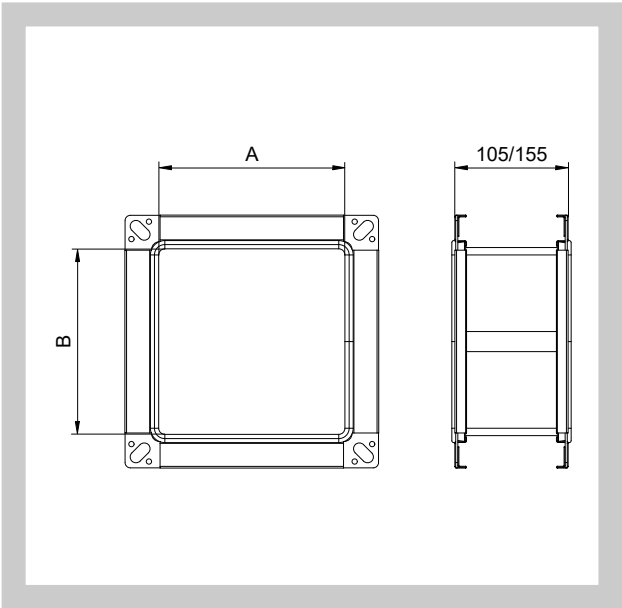
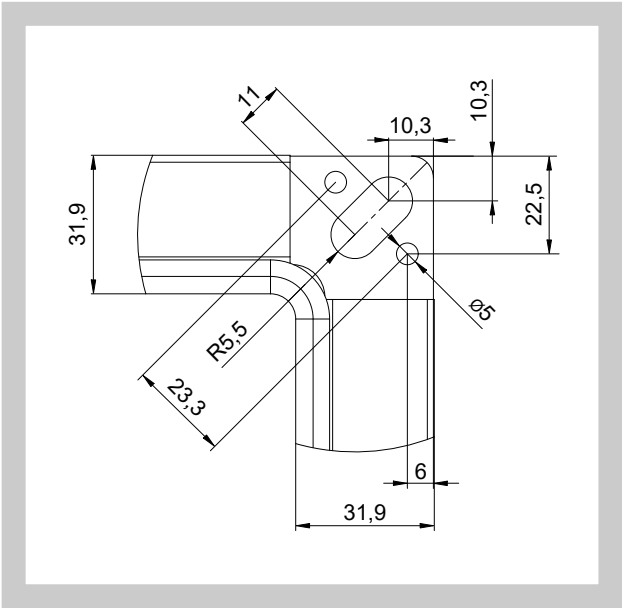


Fig. 3 Breakaway Joint - Square



Fig. 4 Corner flange 30 mm



Tab. 1 Square sleeves 105 mm

A x B [mm]	Weight [kg]		A x B [mm]	Weight [kg]	
	Galvanized	Stainless steel		Galvanized	Stainless steel
125 x 125	0,70	0,71	1000 x 900	5,14	5,21
160 x 125	0,79	0,80	x 1000	5,41	5,49
x 160	0,89	0,90	1100 x 630	4,68	4,75
200 x 160	0,99	1,01	x 710	4,90	4,97
x 200	1,10	1,12	x 800	5,14	5,21
250 x 160	1,13	1,14	x 900	5,41	5,49
x 200	1,24	1,25	x 1000	5,68	5,76
x 250	1,37	1,39	x 1100	5,95	6,03
315 x 160	1,30	1,32	1250 x 710	5,30	5,38
x 200	1,41	1,43	x 800	5,55	5,62
x 250	1,55	1,57	x 900	5,82	5,89
x 315	1,72	1,74	x 1000	6,09	6,17
400 x 200	1,64	1,66	x 1100	6,35	6,44
x 250	1,77	1,80	x 1250	6,76	6,85
x 315	1,95	1,98	1400 x 630	5,49	5,57
x 400	2,18	2,21	x 710	5,71	5,79
500 x 250	2,04	2,07	x 800	5,95	6,03
x 315	2,22	2,25	x 900	6,22	6,30
x 400	2,45	2,48	x 1000	6,49	6,58
x 500	2,72	2,75	x 1100	6,76	6,85
630 x 315	2,57	2,60	x 1250	7,16	7,26
x 400	2,80	2,84	x 1400	7,57	7,67
x 500	3,07	3,11	1600 x 800	6,49	6,58
x 630	3,42	3,46	x 900	6,76	6,85
710 x 400	3,01	3,05	x 1000	7,03	7,12
x 500	3,28	3,33	x 1100	7,30	7,40
x 630	3,63	3,68	x 1250	7,70	7,81
x 710	3,85	3,90	x 1400	8,11	8,22
800 x 400	3,26	3,30	1800 x 900	7,30	7,40
x 500	3,53	3,57	x 1000	7,57	7,67
x 630	3,88	3,93	x 1100	7,84	7,94
x 710	4,09	4,15	x 1250	8,24	8,35
x 800	4,33	4,39	x 1400	8,64	8,76
900 x 500	3,80	3,85	x 1600	9,18	9,31
x 630	4,15	4,20	x 1800	9,72	9,85
x 710	4,36	4,42	2000 x 1000	8,11	8,22
x 800	4,60	4,67	x 1100	8,38	8,49
x 900	4,87	4,94	x 1250	8,78	8,90
1000 x 500	4,06	4,12	x 1400	9,18	9,31
x 630	4,42	4,47	x 1600	9,72	9,85
x 710	4,63	4,69	x 1800	10,26	10,40
x 800	4,87	4,94	x 2000	10,80	10,95

If required, we can supply our square breakaway joints of all inter-dimensions of the aforementioned basic range

Tab. 2 Square sleeves 155 mm

A x B [mm]	Weight [kg]		A x B [mm]	Weight [kg]	
	Galvanized	Stainless steel		Galvanized	Stainless steel
125 x 125	0,74	0,75	1000 x 900	5,43	5,50
160 x 125	0,84	0,85	x 1000	5,72	5,79
x 160	0,94	0,95	1100 x 630	4,95	5,01
200 x 160	1,05	1,06	x 710	5,18	5,24
x 200	1,16	1,18	x 800	5,43	5,50
250 x 160	1,19	1,21	x 900	5,72	5,79
x 200	1,31	1,32	x 1000	6,00	6,08
x 250	1,45	1,47	x 1100	6,29	6,37
315 x 160	1,38	1,40	1250 x 710	5,60	5,68
x 200	1,49	1,51	x 800	5,86	5,94
x 250	1,63	1,65	x 900	6,15	6,22
x 315	1,82	1,84	x 1000	6,43	6,51
400 x 200	1,73	1,76	x 1100	6,72	6,80
x 250	1,88	1,90	x 1250	7,14	7,23
x 315	2,06	2,09	1400 x 630	5,80	5,88
x 400	2,30	2,33	x 710	6,03	6,11
500 x 250	2,16	2,19	x 800	6,29	6,37
x 315	2,35	2,38	x 900	6,57	6,66
x 400	2,59	2,62	x 1000	6,86	6,95
x 500	2,87	2,91	x 1100	7,14	7,23
630 x 315	2,72	2,75	x 1250	7,57	7,67
x 400	2,96	3,00	x 1400	8,00	8,10
x 500	3,24	3,28	1600 x 800	6,86	6,95
x 630	3,61	3,66	x 900	7,14	7,23
710 x 400	3,19	3,23	x 1000	7,43	7,52
x 500	3,47	3,51	x 1100	7,71	7,81
x 630	3,84	3,89	x 1250	8,14	8,24
x 710	4,07	4,12	x 1400	8,57	8,67
800 x 400	3,44	3,49	1800 x 900	7,71	7,81
x 500	3,73	3,77	x 1000	8,00	8,10
x 630	4,10	4,15	x 1100	8,28	8,39
x 710	4,32	4,38	x 1250	8,71	8,82
x 800	4,58	4,64	x 1400	9,13	9,25
900 x 500	4,01	4,06	x 1600	9,70	9,83
x 630	4,38	4,44	x 1800	10,27	10,40
x 710	4,61	4,67	2000 x 1000	8,57	8,67
x 800	4,86	4,93	x 1100	8,85	8,96
x 900	5,15	5,22	x 1250	9,28	9,40
1000 x 500	4,30	4,35	x 1400	9,70	9,83
x 630	4,67	4,73	x 1600	10,27	10,40
x 710	4,89	4,96	x 1800	10,84	10,98
x 800	5,15	5,22	x 2000	11,41	11,56

If required, we can supply our square breakaway joints of all inter-dimensions of the aforementioned basic range

Fig. 5 Breakaway Joint – Round with flange

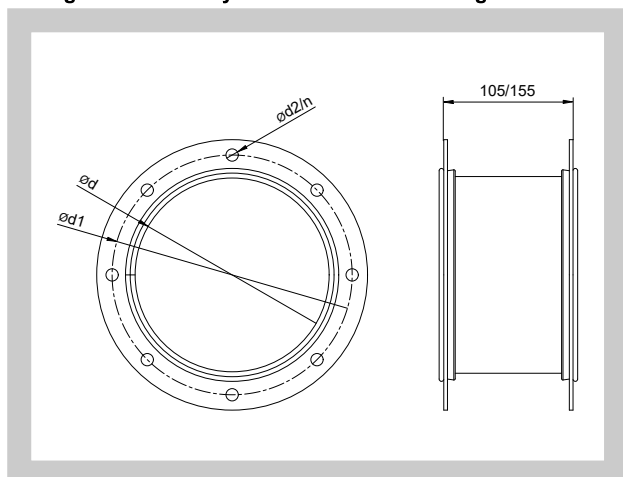


Fig. 6 Breakaway Joint – Round with flange



Fig. 7 Breakaway Joint – Round Spiro

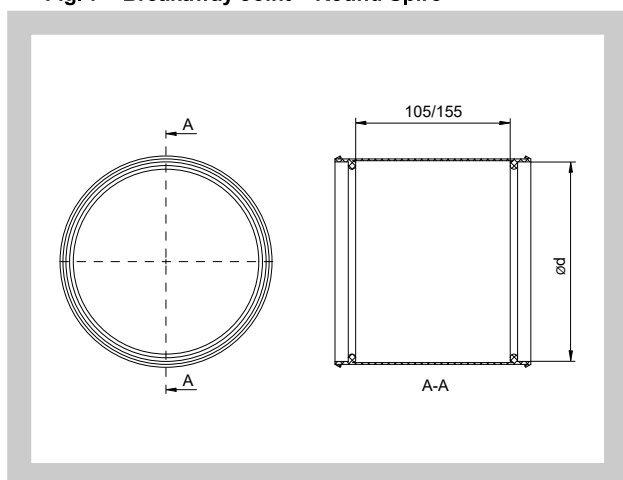


Fig. 8 Breakaway Joint – Round Spiro



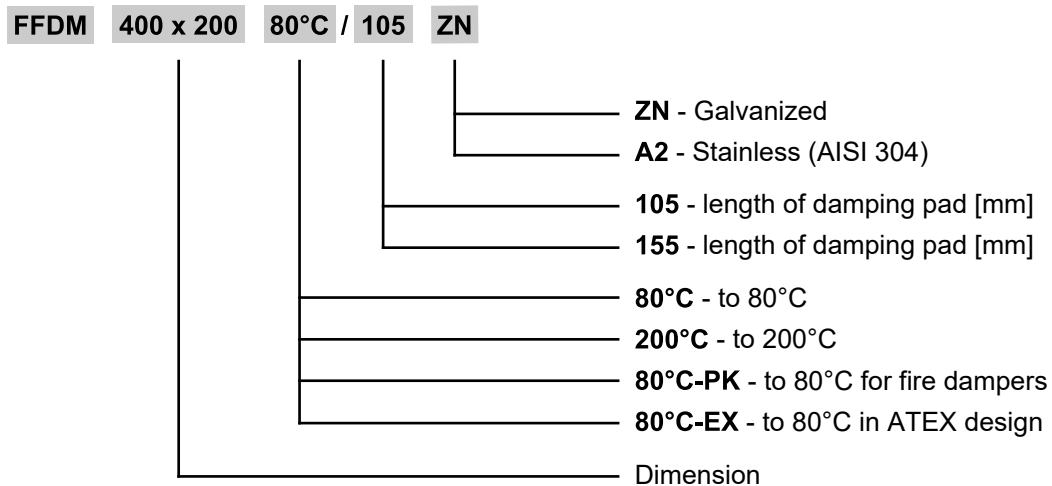
Tab. 3 Round sleeves

Dimension ød	d1	d2	n	Sleeve 105			Sleeve 155		
				Flange [kg]		Spiro [kg]	Flange [kg]		Spiro [kg]
				Galvanized	Stainless steel		Galvanized	Stainless steel	
80	110	10	4	0,4	0,41	0,07	0,42	0,43	0,09
100	130	10	4	0,48	0,49	0,08	0,5	0,51	0,11
125	155	10	8	0,56	0,58	0,1	0,59	0,61	0,13
160	195	10	8	0,86	0,88	0,13	0,89	0,91	0,17
180	215	10	8	0,97	0,99	0,14	1	1,02	0,19
200	235	10	8	1,06	1,08	0,16	1,1	1,12	0,21
225	260	10	8	1,18	1,2	0,18	1,22	1,24	0,24
250	285	10	8	1,29	1,32	0,2	1,34	1,37	0,26
280	315	10	8	1,43	1,47	0,22	1,48	1,52	0,29
315	350	10	12	1,59	1,63	0,25	1,65	1,69	0,33
355	390	10	12	1,78	1,82	0,28	1,84	1,89	0,37
400	445	12	12	2,66	2,76	0,32	2,73	2,84	0,42
450	495	12	12	2,97	3,04	0,36	3,06	3,13	0,47
500	545	12	16	3,27	3,34	0,4	3,38	3,44	0,52
560	605	12	16	3,64	3,72	0,45	3,75	3,83	0,58
630	680	12	16	4,6	4,7	0,5	4,72	4,82	0,66
710	760	12	20	5,14	5,26	0,57	5,27	5,39	0,74
800	860	12	20	6,42	6,57	0,64	6,57	6,72	0,84

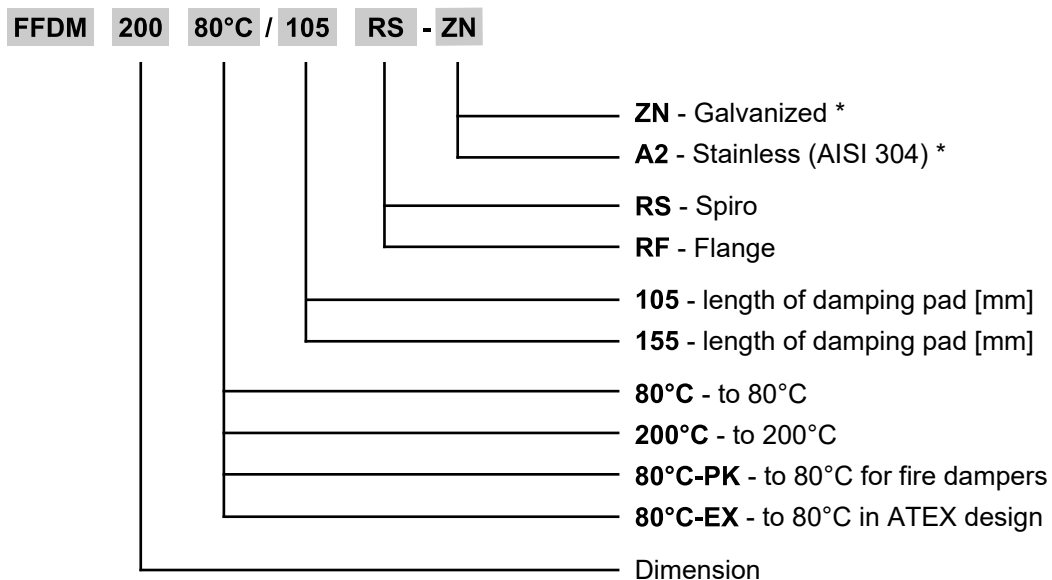
III. ORDERING INFORMATION

5. Order key

5.1. Square sleeves



5.2. Round sleeves



* Spiro design requires no material data – stainless tightening clamps (AISI 304)

IV. PACKAGING, TRANSPORT, ACCEPTANCE, STORAGE AND WARRANTY**6. Logistic data**

- 6.1. We supply our pads unpackaged. For transport and storage, we separate our breakaway joint flanges with cardboard paper, which is removed during assembly. They are transported freely laid in covered vehicles. When handling during transport and storage, cabinets must be protected against mechanical damage and weather impacts.
- 6.2. If no acceptance method is specified in the order, a handover of grids to the carrier will be considered an acceptance.
- 6.3. Our pads must be stored in covered facilities, in environments free of aggressive vapours, gases, and dust.
- 6.4. If our breakaway joints are damaged during their transport, it is necessary to write a protocol with the carrier during their acceptance for the subsequent complaint purposes.

7. Warranty

- 7.1. The manufacturer provides a 24-month warranty for its breakaway joints from the date of their shipment.
- 7.2. The warranty expires when our pads are used for other purposes, equipment, and working conditions than permitted by this standard or after their mechanical damage occurred during handling.

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