

TECHNICAL SPECIFICATIONS

NEFIT Industrial b.v. based in Deventer, has been producing castings made from black malleable iron for almost 50 years. Right from the beginning the production of malleable iron fittings has been an important part of the total production. NEFIT has one of the best equipped foundaries in Europe. The high quality of castings is guaranteed due to :

- * Computer controlled supervision of the entire casting process.
- * Continuous checking of the composition of the moulding sand
- * Computer controlled annealing furnace
- * Extensive statistical process and quality control.
- * Sound and reliable castings have been accurately machined, individually tested, cleaned and finished.

The high quality of the castings and the precision finish of the products ensure NEFIT fittings fully comply with ISO and EN (European Norms) and BS standards for Malleable pipe fittings.

NEFIT *N* BLACK HEART (BLACK / GALVANIZED) MALLEABLE IRON THREADED PIPE FITTINGS COMPLY WITH THE FOLLOWING REQUIREMENTS.

Design :

NEFIT malleable iron fittings have a full bore banded reinforcement (for female outlets) and conform to BS 143 & BS 1256:1986 which is equivalent to ISO 49 and DIN 2950. Nefit fittings have internal and external jointing threads conforming to BS 21 (ISO R7 /1). The internal thread is cylindrical (parallel) and the external thread is conical , in ratio of 1:16. Nefit fittings have a full clear bore and a high factor of safety over stated working pressures.

ISO 49:1983 is the international standard for "Malleable Cast Iron fittings threaded to ISO 7/1".

Dimensions :

Dimensions for face-to-face, face-to-centre, centre-to-centre, are shown for all fittings and comply with BS143 & BS 1256 and ISO 49. Dimensions are given in millimeters and are subject to the tolerances stated in BS 143 / BS 1256 & ISO 49 and EN 10242 as shown in table below. NEFIT fittings are according to DIN EN 10242 which is equivalent to ANSI B 16.3.

Dimensions (mm) from to	Tolerance (mm)
upto 30	± 1.5
30 - 50	± 2.0
50 - 75	± 2.5
75 - 100	± 3.0
100 - 150	± 3.5
150 - 200	± 4.0
200 and above	± 5.0

Table: 1

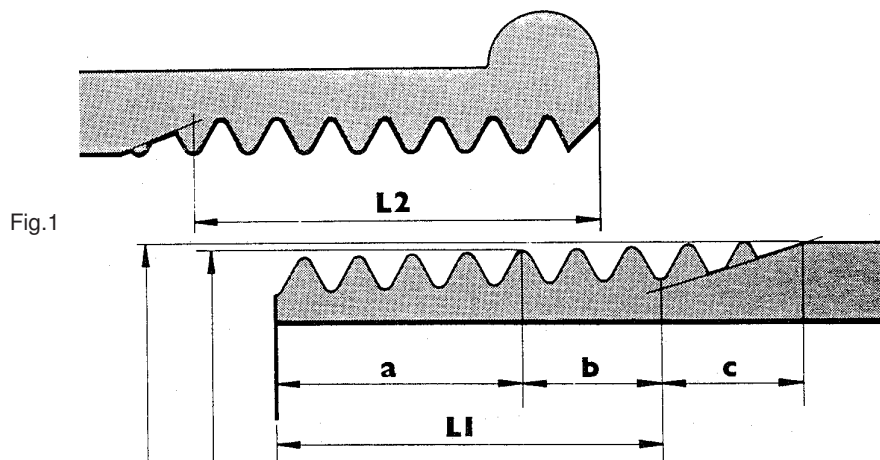
Threads :

Nefit fittings have internal and external jointing threads conforming to BS 21 (ISO R7 /1). The internal thread is cylindrical (parallel) and the external thread is conical, in ratio of 1:16.

The **cylindrical inner thread** of the fittings has a length sufficient to enable screwing in the external, conical thread far enough to ensure that a good sealing is obtained.

The **conical external thread** has conicity of 1:16. The total thread lengths of the external thread consists of 3 parts: The total length is divided into in 3 portions: (refer Fig.1)

- The distance “a” of the gauge plane (Fig.1) is laid out with tolerances in such a way that the external thread can be easily screwed in, even into the smallest internal thread and that the sparingly applied sealing material will be correctly drawn into the joint.
- The dimension “b” is the thread portion where the sealing is made. This thread portion behind the gauge plane has fully formed roots, and its length was chosen in order to provide a sufficient tightening path for the tool, even at maximum allowable internal thread diameter assuring a strong compression between parallel internal and taper external threads.
- The “washout threads”, that means the last 1 or 2 threads with partially formed and uncomplete roots, remain usually visible. In case of screwing the external thread too far by engaging the washout threads, there is danger of leakage of cracking



Thread (mm)	DN (mm)	Gauge length a (mm)	Gauge diameter (mm)	Pitch	Number of turns per inch	Average length a + b (mm)
1/8	6	4.0 ± 0.9	9.728	0.907	28	7
1/4	8	6.0 ± 1.3	13.157	1.337	19	10
3/8	10	6.4 ± 1.3	16.662	1.337	19	10
1/2	15	8.2 ± 1.8	20.955	1.814	14	13
3/4	20	9.5 ± 1.8	26.441	1.814	14	15
1	25	10.4 ± 2.3	33.246	2.309	11	17
1 1/4	32	12.7 ± 2.3	41.910	2.309	11	19
1 1/2	40	12.7 ± 2.3	47.803	2.309	11	19
2	50	15.9 ± 2.3	56.614	2.309	11	24
2 1/2	65	17.5 ± 3.5	75.184	2.309	11	27
3	80	20.6 ± 3.5	87.884	2.309	11	30
4	100	25.4 ± 3.5	113.030	2.309	11	36

Table: 2

Sealing :

Sealing the connection has to come about through contact between the metals of the parts being connected. The sealing material therefore should only fill the deviations from the theoretical thread profile.

In order to make a good connection, the following points should be considered:

1. The thread cutting machine must be set up in such a way that the fittings can be screwed in by hand across the length given in table below.
2. Screw the external thread no deeper into the internal thread than length **a + b** (refer Fig.1) otherwise sealing cannot occur at the lead-out end of the thread.
3. Use the appropriate sealing material and use it sparingly.

Sealing materials for threaded joints:

It is important to adapt the sealing materials to the working conditions. If no other experience is available, the following material can be recommended.

Fluid	Sealing material	Hemp and Paraliq PN 35 sealing paste	Paraliq PM 35-fleece thread sealing strip	Hemp and Synthesol UG1 sealing paste	Synthesol-fleece thread sealing strip	PTFE sealing strips approx. up to 1/4 and max. 250°C	Hemp and special sealing paste, eg. such containing lead powder	Copper wadding and heat resistant oil up to 1 1/4
Portable water up to 95°C		(r)	(r)			*		
Hot water up to 130°C		(r)	(r)			*	*	
Natural gas, city gas, liquefied gases ¹		(r)	(r)	*	*	*	*	
Pressurized air		(r)	(r)	*	*	*	*	
Industrial gases								
O ₂ excepted						(r)	(r)	
O ₂ included						(r)		
Steam								
up to 150°C						(r)	(r)	
up to 300°C								(r)
Fuel oil, Diesel oil, petrol, max. 80°C				(r)	(r)	*	*	
Oils up to 200°C						(r)	(r)	

(r) = recommended sealing material
 * = also applicable
¹ not in liquid condition

Table: 3

Paraliq PM35 sealing paste and Paraliq fleece were tested to DIN 30660 (June 1982) and approved by DVGW/SVGW for standard gas installations (up to 4 resp. 5 bar/80°C), drinking water installations (up to 16 bar/95°C) and water heating installation (up to 6 bar/130°C) in domestic applications.

For other applications consider the appropriate prescriptions on threaded joints.

Taper seat unions (metal sealed)

The metal on metal sealed union depend on especially careful and precise machining of the sealing surfaces. It is recommended to slightly lubricate them before assembly as far as it is compatible with the conveyed fluid. If machinery oil is not appropriate, e.g. for hygienic consideration, also a thread sealing paste may be used.

After sustained stocking and in case of dirt the sealing surfaces must be cleaned.

Fastening Thread:

Where fastening thread is used it is as per ISO 228/1. The fastening thread as per ISO 228/1 is used only in few cases ex : on nuts and long screws. The main difference is that the ISO 7/1 thread becomes pressure tight in the thread by mating of the threads themselves and by using hemp with sealing paste, sealing strips or other materials, whereas the ISO 228/1 thread is purely a mechanical fastening thread.

Working Pressure:

NEFIT malleable iron threaded fittings are designed to be used for working pressures of 25 bar (between -20°C to +120°C). The fittings are tested to pressures above 200 bar. The graph below gives details of maximum operating pressure and temperature for the malleable iron fittings. For normal applications the minimum temperatures used for malleable pipe fittings is -20°C and maximum of 300°C.

Our fittings are separately tested on tightness by internal pressure. The test pressures lie over the values fixed in the standard. Therefore the fittings can be generally applied for the following working pressures

Fluid	Fitting size	Nominal pressure PN	Working pressure WP at temperature	
			up to 120°C bar	up to 300°C bar
Liquids	1/8 - 4	25	25	20
	5 - 6	16	16	13
Pressurized air, gases, combustible gases	1/8 - 4	16	16	13
	5 - 6	10	10	8

Table: 4

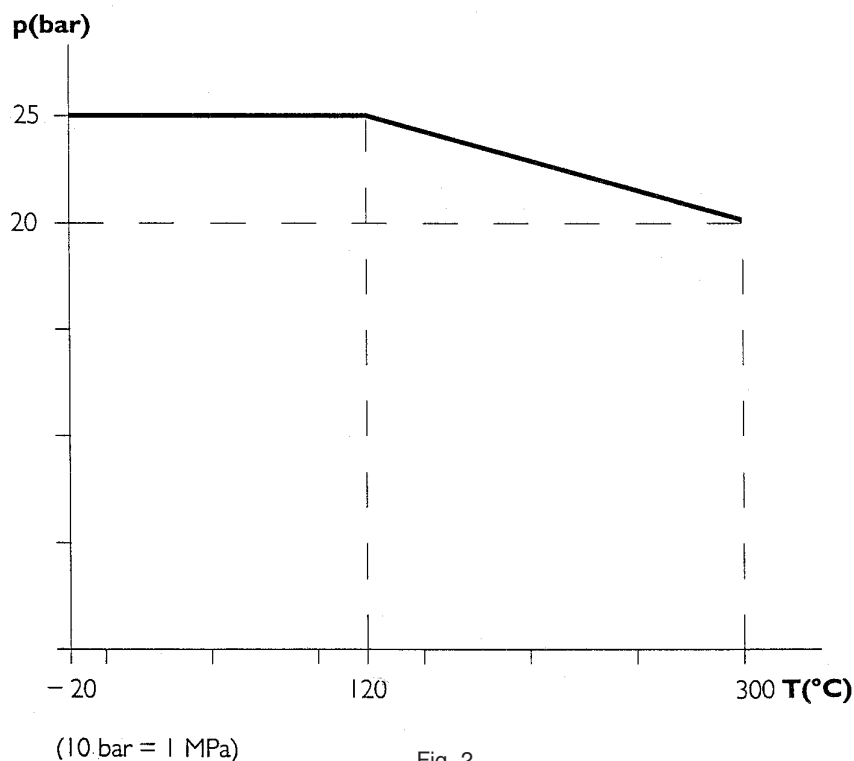
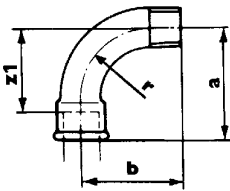
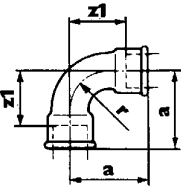
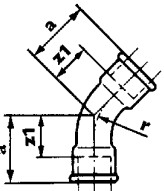
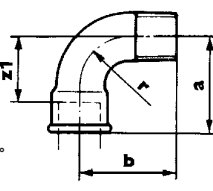
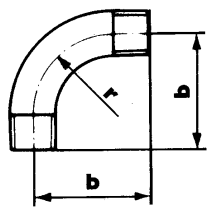
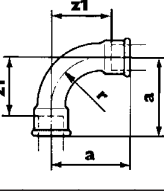
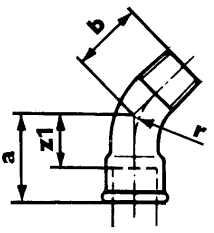
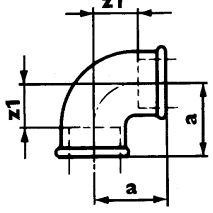
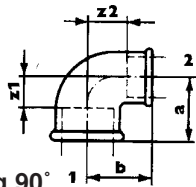


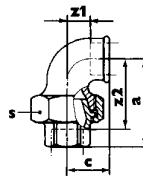
Fig. 2

<p>1 ISO G4 Bend 90°</p> 							<p>2a ISO D1 Short Bend 90°</p> 							<p>41 ISO G1/45 Bend 45°</p> 						
DN	a mm	b mm	r mm	z1 mm		G gram	DN	a mm	r mm	z1 mm		G gram	DN	a mm	r mm	z1 mm		G gram		
1/8	35	32	22	28		33	1/4	30		20		71	3/8	30	28	20		78		
1/4	40	36	25	30		52	3/8	36		26		95	1/2	36	32	23		115		
3/8	48	42	28	38		88	1/2	45	25	32		125	3/4	43	42	28		213		
1/2	55	48	32	42		127	3/4	50	28	35		193	1	51	52	34		326		
3/4	69	60	42	54		196	1	63	35	46		298	1 1/4	64	70	45		560		
1	85	75	52	68		325	1 1/4	76	45	57		490	1 1/2	68	80	49		759		
1 1/4	105	95	70	86		620	1 1/2	85	55	66		662	2	81	100	57		1244		
1 1/2	116	105	80	97		762	2	102	68	78		1110	2 1/2	99	130	72		1605		
2	140	130	100	116		1265							3	113	155	83		2340		
2 1/2	176	165	130	149		2174														
3	205	190	155	175		3500														
4	260	245	205	224		5400														
<p>1a ISO D4 Short Bend 90°</p> 							<p>3 ISO G8 Bend 90°</p> 													
DN	a mm	b mm	r mm	z1 mm		G gram	DN	b mm	r mm			G gram								
1/4	30	30		20		39	3/8	42	28			61								
3/8	36	36		26		61	1/2	48	32			107								
1/2	45	45	25	32		114	3/4	60	42			218								
3/4	50	50	28	35		170	1	75	52			373								
1	63	63	35	46		282	1 1/4	95	70			641								
1 1/4	76	76	45	57		452	1 1/2	105	80			763								
1 1/2	85	85	55	66		600	2	130	100			1184								
2	102	102	68	78		1090	2 1/2	160	130			1931								
2 1/2	119	110		92		1660														
3	141	130		111		1967														
<p>2 ISO G1 Bend 90°</p> 							<p>40 ISO G4/45 Bend 45°</p> 							<p>90 ISO A1 Elbow Equal</p> 						
DN	a mm	r mm	z1 mm			G gram	DN	a mm	b mm	r mm	z1 mm		G gram	DN	a mm		z1 mm	z2 mm		G gram
1/4	40	25	30			63	1/4	26	21		16		35	1/8	19		12			29
3/8	48	28	38			108	3/8	30	24	28	20		58	1/4	21		11			45
1/2	55	32	42			145	1/2	36	30	32	23		110	3/8	25		15			62
3/4	69	42	54			253	3/4	43	36	42	28		175	1/2	28		15			97
1	85	52	68			433	1	51	42	52	34		267	3/4	33		18			126
1 1/4	105	70	86			700	1 1/4	64	54	70	45		470	1	38		21			180
1 1/2	116	80	97			870	1 1/2	68	58	80	49		678	1 1/4	45		26			300
2	140	100	116			1412	2	81	70	100	57		1026	1 1/2	50		31			420
2 1/2	176	130	149			2819	2 1/2	99	86	130	72		1429	2	58		34			701
3	205	155	175			3867	3	113	100	155	83		2410	2 1/2	69		42			1128
4	260	205	224			6700							3	78		48			1384	
													4	96		60			2556	

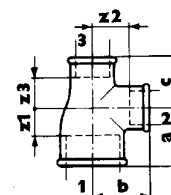
90
ISO A1
Elbow Reducing 90°



96
ISO UA11
Union Elbow with Conical Seat



130
ISO B1
Tee Reducing

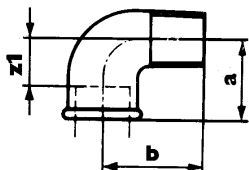


DN	a mm	b mm	z1 mm	z2 mm	G gram
3/8 x 1/4	23	23	13	13	56
1/2 x 3/8	26	26	13	16	66
3/4 x 3/8	28	28	13	18	101
3/4 x 1/2	30	31	15	18	135
1 x 1/2	32	34	15	21	176
1 x 3/4	35	36	18	21	191
1 1/4 x 3/4	36	41	17	26	231
1 1/4 x 1	40	42	21	25	262
1 1/2 x 1	42	46	23	29	355
1 1/2 x 1 1/4	46	48	27	29	388
2 x 1	44	52	20	35	378
2 x 1 1/2	52	56	28	36	634
2 1/2 x 2	61	66	34	42	984

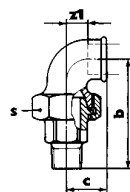
DN	a mm	c mm	z1 mm	z2 mm	s mm	G gram
1/4	48	21	10	38	30	107
3/8	52	25	15	42	36	220
1/2	58	28	15	45	46	223
3/4	62	33	18	47	50	338
1	72	38	21	55	55	451
1 1/4	82	45	26	63	70	791
1 1/2	90	50	31	71	75	953
2	100	58	34	76	90	1435
2 1/2	119	70	43	85	110	2453

DN	a mm	b mm	c mm	z1 mm	z2 mm	z3 mm	G gram
1/2x3/8x3/8	26	26	25	13	16	15	111
1/2x3/8x1/2	28	28	26	15	15	16	115
1/2x1/2x3/8	28	28	26	15	15	16	118
3/4x3/8x1/2	28	28	26	13	18	13	152
3/4x3/8x3/4	33	33	28	18	18	18	152
3/4x3/4x3/8	33	33	28	18	18	18	170
3/4x1/2x3/8	30	31	26	15	18	16	145
3/4x1/2x1/2	30	31	28	15	18	15	145
3/4x1/2x3/4	33	33	31	18	18	18	166
3/4x3/4x1/2	33	33	31	18	18	18	175
1x3/8x1	38	38	32	21	21	22	175
1x1/2x1/2	32	34	28	15	21	15	161
1x1/2x3/4	32	34	30	15	21	15	230
1x1/2x1	38	38	34	21	21	21	216
1x3/4x1/2	32	34	30	15	21	15	234
1x3/4x3/4	35	36	33	18	21	18	255
1x3/4x1	38	38	36	21	21	21	260
1x1x3/8	38	38	32	2	21	22	270
1x1x1/2	38	38	34	21	21	21	287
1x1x3/4	38	38	36	21	21	21	270
1.1/4x1/2x1	34	38	32	15	25	15	287
1.1/4x1/2x1.1/4	45	45	38	26	26	25	287
1.1/4x3/4x3/4	36	41	33	17	26	18	290
1.1/4x3/4x1	36	41	35	17	26	18	297
1.1/4x3/4x1.1/4	45	45	41	26	26	26	309
1.1/4x1x1/2	34	28	32	15	25	15	342
1.1/4x1x3/4	36	41	35	17	26	18	355
1.1/4x1x1	40	42	36	21	25	21	370
1.1/4x1x1.1/4	45	45	42	26	26	25	345
1.1/2x1/2x1.1/4	36	42	34	17	29	15	345
1.1/2x3/4x1.1/4	38	44	36	19	29	17	340
1.1/2x1x1	42	46	38	23	29	21	380
1.1/2x1x1.1/4	42	46	40	23	29	21	395
1.1/2x3/4x1.1/2	50	50	44	31	31	29	350
1.1/2x1x1.1/2	50	50	46	31	31	29	422
1.1/2x1.1/4x1/2	36	42	34	17	29	15	410
1.1/2x1.1/4x3/4	38	44	36	19	29	17	422
1.1/2x1.1/4x1	42	46	40	23	29	21	430
1.1/2x1.1/4x1.1/2	50	50	48	31	31	29	504
1.1/2x1.1/2x1/2	50	50	42	31	31	29	515
1.1/2x1.1/2x3/4	50	50	44	31	31	29	530
1.1/2x1.1/2x1	50	50	46	31	31	29	530
1.1/2x1.1/2x1.1/4	50	50	48	31	31	29	544
2X3/4X1.1/2	40	50	38	16	35	19	515
2X3/4X2	58	58	50	34	34	35	515
2X1X1.1/2	44	52	42	20	35	23	523
2X1X2	58	58	52	374	34	35	602
2X1.1/4X1.1/4	48	54	45	24	35	26	633
2X1.1/4X1.1/2	48	54	46	24	35	27	640
2X1.1/4X2	58	58	54	34	34	35	619
2X1.1/2X3/4	40	50	38	16	35	19	638
2X1.1/2X1	44	52	42	20	35	23	640

92
ISO A4
Elbow Equal 90°



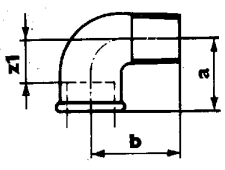
98
ISO UA12
Union Elbow with Conical Seat



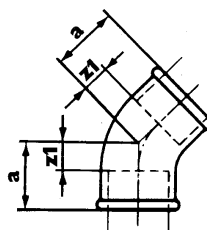
DN	a mm	b mm	z1 mm	z2 mm	G gram
1/8	19	25	12		25
1/4	21	28	11		39
3/8	25	32	15		65
1/2	28	37	15		99
3/4	33	43	18		145
1	38	52	21		238
1 1/4	45	60	26		360
1 1/2	50	65	31		445
2	58	74	34		740
2 1/2	69	88	42		1109
3	78	98	48		1814
4	96	118	60		2550

DN	b mm	c mm	z1 mm	s mm	G gram
1/4	61	21	11	29	154
3/8	65	25	15	36	245
1/2	76	28	15	46	382
3/4	82	33	18	50	519
1	94	38	21	55	871
1 1/4	107	45	26	70	1055
1 1/2	115	50	31	75	1581
2	128	58	34	90	3163
2 1/2	152	70	43	110	3938
3	168	78	48	130	

92
ISO A4
Elbow Reducing 90°



120
ISO A1/45
Elbow 45°

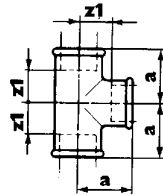


DN	a mm	b mm	z1 mm	z2 mm	G mm
1/2 x 3/8	26	33	13		78
3/4 x 1/2	30	40	15		111
1 x 3/4	35	46	18		208
1 1/4 x 1	40	56	21		262

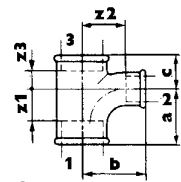
DN	a mm	z1 mm	G gram
3/8	20	10	45
1/2	22	9	68
3/4	25	10	102
1	28	11	161
1 1/4	33	14	250
1 1/2	36	17	343
2	43	19	496

2x1.1/2x1.1/4	48	54	46	24	35	27	652
2x1.1/2x1.1/2	52	55	50	28	36	31	662
2x1.1/2x2	58	58	55	34	34	36	680
2x2x3/4	58	58	50	34	34	35	710
2x2x1	58	58	52	34	34	35	714
2x2x1.1/4	58	58	54	34	34	35	722

130
ISO B1
Equal Tee



131
ISO E1
Pitcher Tee, Reducing



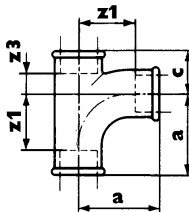
130
ISO B1
Reducing Tee

DN	a mm	z1 mm	G gram
1/8	19	12	35
1/4	21	11	71
3/8	25	15	87
1/2	28	15	127
3/4	33	18	192
1	38	21	260
1 1/4	45	26	491
1 1/2	50	31	534
2	58	34	939
2 1/2	69	42	1559
3	78	48	1962
4	96	60	3360

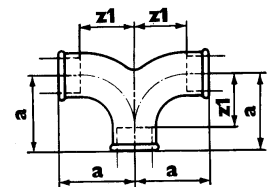
DN	a mm	b mm	c mm	z1 mm	z2 mm	z3 mm	G gram
1/2x3/8	45	45	24	32	32	11	149
3/4x1/2	47	48	28	32	35	10	221
3/4x3/4x1/2	50	50	27	35	35	14	231
1 x 1 x 3/4	63	63	31	46	46	16	433

DN	a mm	b mm	z1 mm	z2 mm	z3 mm	G gram
3/8x1/4	23	23	13	13		67
3/8x1/2	26	26	16	13		70
1/2x1/4	24	24	11	14		85
1/2x3/8	26	26	13	16		115
1/2x3/4	31	30	18	15		122
3/4x1/4	26	27	11	17		125
3/4x3/8	28	28	13	18		152
3/4x1/2	30	31	15	18		166
3/4x1	36	35	21	18		238
1x1/4	28	31	11	21		182
1x3/8	30	32	13	22		193
1x1/2	32	34	15	21		216
1x3/4	35	36	18	21		278
1x1.1/4	42	40	25	21		337
1x1.1/2	46	42	29	23		400
1.1/4x3/8	32	36	13	26		338
1.1/4x1/2	34	38	15	25		271
1.1/4x3/4	36	41	17	26		309
1.1/4x1	40	42	21	25		345
1.1/4x1.1/2	48	46	29	27		426
1.1/4x2	54	48	35	24		480
1.1/2x1/2	36	42	17	29		349
1.1/2x3/4	38	44	19	29		350
1.1/2x1	42	46	23	29		422
1.1/2x1.1/4	46	48	27	29		504
1.1/2x2	55	52	36	28		724
2x1/2	38	48	14	35		492
2x3/4	40	50	16	35		515
2x1	44	52	20	35		602
2x1.1/4	48	54	24	35		619
2x1.1/2	52	55	28	36		759
2.1/2x1	47	60	20	43		876
2.1/2x1.1/4	52	62	25	43		1131
2.1/2x1.1/2	55	63	28	44		1200
2.1/2x2	61	66	34	42		1419
3x1	51	67	21	50		1200
3x1.1/4	55	70	25	51		1319
3x1.1/2	58	71	28	52		1370
3x2	64	73	34	49		1625
3x2.1/2	72	76	42	49		1775
4x2	70	86	34	62		2197
4x3	84	92	48	62		3221

131
ISO E1
Pitcher Tee, Equal



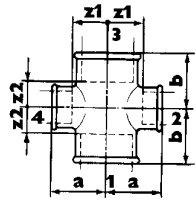
132
ISO E2
Twin Elbow



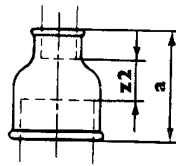
DN	a mm	c mm	z1 mm	z3 mm	G gram
1/2	45	24	32	11	161
3/4	50	28	35	13	233
1	63		46	16	465
1 1/4	76	40	57	21	664
1 1/2	85	43	66	24	773
2	102	53	78	29	1356

DN	a mm	z1 mm	G gram
1/2	45	32	182
3/4	50	35	278
1	63	46	536
1 1/4	76	57	837
1 1/2	85	66	1118
2	102	78	1641

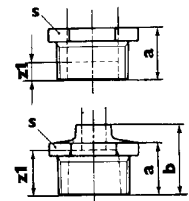
180
ISO C1
Cross Reducing



240
ISO M2
Socket, Reducing



241
ISO N4
Reducing Bush

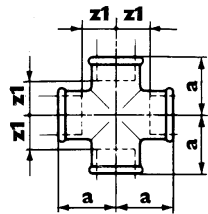


DN	a mm	b mm	z2 mm	z1 mm	G gram
1/2x3/8	26	26	13	16	145
3/4x1/2	30	31	15	18	207
1x1/2	32	34	18	21	295
1x3/4	35	36	18	21	310
1.1/4x3/4	36	41	17	26	422
1.1/4x1	40	42	21	25	470
1.1/2x1	42	46	23	29	574

DN	a mm	z2 mm	G gram
1/4x1/8	27	10	30
3/8x1/8	30	13	32
3/8x1/4	30	10	34
1/2x1/4	36	13	54
1/2x3/8	36	13	60
3/4x1/4	39	14	33
3/4x3/8	39	14	88
3/4x1/2	39	11	89
1x3/8	45	18	120
1x1/2	45	15	124
1x3/4	45	13	120

DN	a mm	z1 mm	s mm	G gram
1/4x1/8	20	13	17	10
3/8x1/8	20	13	19	13
3/8x1/4	20	10	19	10
1/2x1.1/8	24	10	22	13
1/2x1/4	24	14	22	13
3/4x3/8	26	14	22	14
3/4x1/2	26	16	30	14
1x3/8	29	16	30	11
1x3/4	29	13	30	18
1.1/4x3/8	29	19	36	15
1.1/4x1/2	31	16	36	13
1.1/4x3/4	31	14	36	18
1.1/4x1	31	21	46	16
1.1/2x1/2	31	18	46	14
1.1/2x3/4	31	16	46	23
1.1/2x1	31	14	46	21
1.1/2x1.1/4	31	18	50	19
2x1/2	35	16	50	17
2x3/4	35	14	50	28
2x1	35	12	50	26
2x1.1/4	35	35	64	24
2x1.1/2	35	13	64	22
2.1/2x1	44	20	94	26
2.1/2x1.1/4	44	17	94	23
2.1/2x1.1/2	40	18	64	22
2.1/2x2	40	16	64	28
3x2	44	16	65	28
3x1.1/4	51	21	120	34
3x2.1/2	44	21	79	23
4x3	40	16	79	31

180
ISO C1
Cross Equal

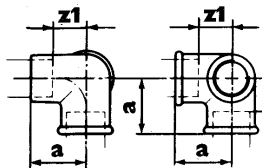


DN	a mm	z1 mm	G gram
1/4	21	11	74
3/8	25	15	93
1/2	28	15	156
3/4	33	18	230
1	38	21	329
1 1/4	45	26	517
1 1/2	50	31	602
2	58	34	1144
3	78	48	2190

2x1/2	65	28	290
2x3/4	65	26	300
2x1	65	24	330
2x1.1/4	65	22	368
2x1.1/2	65	22	384
2.1/2x1.1/4	74	28	616
2.1/2x1.1/2	74	28	590
2.1/2x2	74	23	565
3x1.1/2	80	31	763
3x2	80	26	866
3x2.1/2	80	23	888
4x2	94	34	1474
4x2.1/2	94	31	1495
4x3	94	28	1615

2x1/2	35	16	50	17	254
2x3/4	35	14	50	28	223
2x1	35	12	50	26	146
2x1.1/4	35	35	64	24	374
2x1.1/2	35	13	64	22	384
2.1/2x1	44	20	94	26	627
2.1/2x1.1/4	44	17	94	23	648
2.1/2x1.1/2	40	18	64	22	627
2.1/2x2	40	16	64	28	613
3x2	44	16	65	28	648
3x1.1/4	51	21	120	34	920
3x2.1/2	44	21	79	23	920
4x3	40	16	79	31	1409

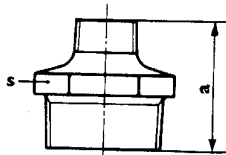
221
ISO Za1
Side Outlet Elbow



DN	a mm	z1 mm	G gram
1/2	28	15	117
3/4	33	18	160
1	38	21	282
3/8	25	15	90

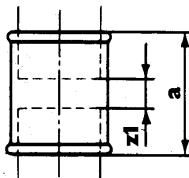
245

ISO N8
Double Nipple, Reducing



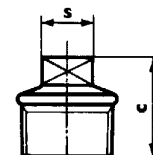
270

ISO M2
Socket, Equal



290

ISO T9
Plug, Square Head, Beaded



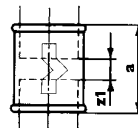
DN	a mm	s mm	G gram
3/8x1/4	38	19	41
1/2x1/4	44	22	50
1/2x3/8	44	27	68
3/4x3/8	47	32	79
3/4x1/2	47	32	93
1x1/2	53	41	134
1x3/4	35	41	133
1.1/4x1/2	57	50	185
1.1/4x3/4	57	50	188
1.1/4x1	57	50	241
1.1/2x3/4	59	55	209
1.1/2x1	59	55	292
1.1/2x1.1/4	59	55	292
2x1	68	69	365
2x1.1/4	68	64	476
2x1.1/2	68	69	543
2.1/2x2	75	79	659
3x2	83	95	926
3x2.1/2	83	95	1077

DN	a mm	z1 mm	G gram
1/8	25	11	15
1/4	27	7	26
3/8	30	10	45
1/2	36	10	64
3/4	39	9	98
1	45	11	136
1 1/4	50	12	204
1 1/2	55	17	245
2	65	17	455
2 1/2	74	20	740
3	80	20	969
4	94	22	1654
5	109	29	2945
6	120	40	4215

DN	c mm	s mm	G gram
1/8	20	8	12
1/4	22	9	23
3/8	24	10	43
1/2	26	11	50
3/4	32	17	88
1	36	19	150
1 1/4	39	22	223
1 1/2	41	22	286
2	48	27	439
2 1/2	54	32	647
3	60	36	914
4	70	41	1880

271

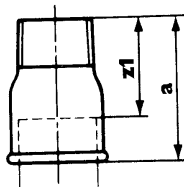
ISO M2-R-L
Socket, Right and
Left Hand Thread Equal



DN	a mm	z1 mm	G gram
3/8	30	10	44
1/2	36	10	68
3/4	39	9	101
1	45	11	159
1 1/4	50	12	234
1 1/2	55	17	342
2	65	17	515

246

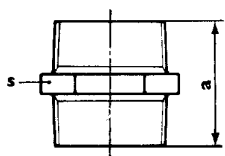
ISO M4
Socket, Reducing



DN	a mm	z1 mm	G gram
3/8x1/4	35	25	37
1/2x1/4	43	30	56
1/2x3/8	43	30	54
3/4x1/2	48	33	105
1x1/2	55	38	147
1x3/4	55	38	151
1.1/4x3/4	60	41	212
1.1/4x1	60	41	227
1.1/2x1	63	44	282
1.1/2x1.1/4	63	44	284
2x1.1/2	70	46	417

280

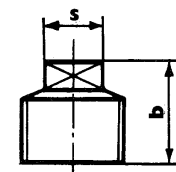
ISO N8
Double Nipple
Equal



DN	a mm	s mm	G gram
1/8	29	17	19
1/4	36	19	31
3/8	38	22	41
1/2	44	27	69
3/4	47	30	97
1	53	41	162
1 1/4	57	50	251
1 1/2	59	55	285
2	68	70	467
2 1/2	75	84	688
3	83	100	1050
4	95	150	1891

291

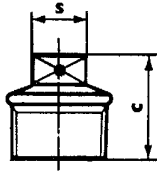
ISO T8
Plug, Square Head



DN	b mm	s mm	G gram
1/8	16	8	8
1/4	21	10	13
3/8	19	10	23
1/2	23	11	39
3/4	27	17	61
1	32	19	98
1 1/4	35	22	142
1 1/2	36	22	153
2	43	27	302
2 1/2	50	32	553
3	57	36	791
4	67	41	1676

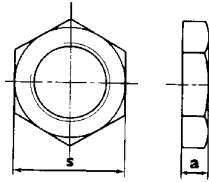
294

ISO T9
Plug, Square Head
Drillend, beaded



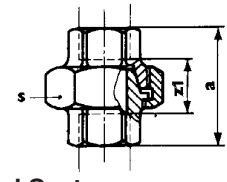
310

ISO P4
Backnut, Hexagon



340

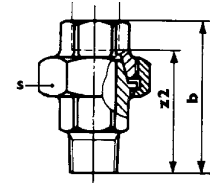
ISO U11
Union, Conical Seat



DN	c mm	s mm				G gram	DN	a mm	s mm					G gram	DN	a mm	z1 mm	s mm				G gram
1/8	20	8				12	1/4	6	22					12	1/8	38	24	26				76
1/4	22	9				22	3/8	7	27					21	1/4	42	22	32				102
3/8	24	10				41	1/2	8	32					32	3/8	45	25	36				100
1/2	26	11				50	3/4	9	36					39	1/2	48	22	46				173
3/4	32	17				106	1	10	46					74	3/4	52	22	50				253
1	36	19				142	1 1/4	11	55					120	1	58	24	55				331
1 1/4	39	22				217	1 1/2	12	60					138	1 1/4	65	27	70				608
1 1/2	41	22				282	2	13	75					254	1 1/2	70	32	75				703
2	48	27				439	2 1/2	16	108					300	2	78	30	90				1080
2 1/2	54	35				652	3	19	135					404	2 1/2	85	31	110				1743
3	60	37				905									3	95	35	130				2421
4	70	44				2010									4	110	38	163				3496

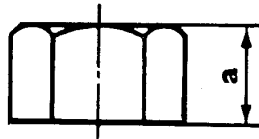
341

ISO U12
Union, Conical Seat



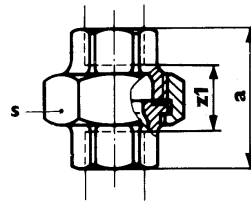
300

ISO T1
Cap, Hexagon



330

ISO U1
Union, Flat Seat

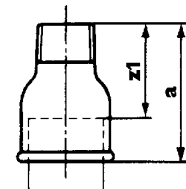


DN	b mm	z2 mm	s mm			G gram
1/4	55	45	32			73
3/8	58	48	36			106
1/2	66	53	46			201
3/4	72	57	50			331
1	80	63	55			410
1 1/4	90	71	70			708
1 1/2	95	76	75			829
2	106	82	90			1310
2 1/2	118	91	110			2018
3	130	100	130			2950

DN	a mm	s mm				G gram	DN	a mm	z1 mm	s mm				G gram
1/4	15	17				30	1/4	42	22	32				63
3/8	17	22				35	3/8	45	25	36				90
1/2	23	27				63	1/2	48	22	44				163
3/4	26	32				72	3/4	52	22	48				270
1	30	41				112	1	58	24	55				356
1 1/4	30	50				210	1 1/4	65	27	70				579
1 1/2	30	55				256	1 1/2	70	32	75				713
2	37	70				434	2	78	30	90				1063
2 1/2	41	85				744	2 1/2	85	31	110				1730
3	43	100				960	3	95	35	130				2590
4	50	127				1430	4	110	38	164				3307

529a

ISO M4
Extension Socket, beaded



DN	a mm	z1 mm				G gram
3/8	35	25				38
1/2	43	30				65
3/4	48	33				107
1	55	38				147
1 1/4	60	41				236