

**PROCESS**

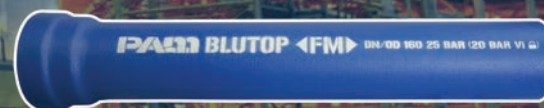
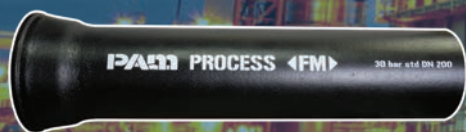


**blutop**



# DUCTILE IRON PIPELINE

Pipes – Fittings – Valves  
for fire protection  
of industrial sites and  
public equipments



Comprehensive pipe solutions

**PAM**  
SAINT-GOBAIN



■ **INTRODUCTION**

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## KEY POINTS OF THE RANGE:

### DUCTILE IRON, BACKBONE OF PIPEWORKS FOR FIRE PROTECTION

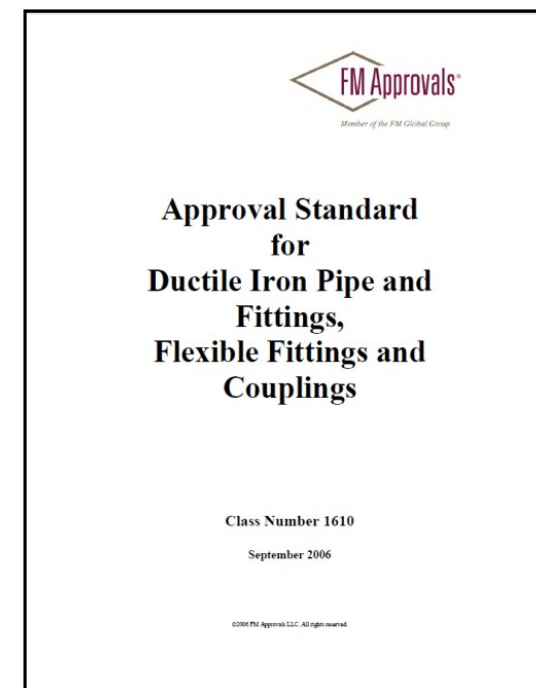
- Ductile iron pipes and fittings are vital components of fire protection networks, with valves, pillar hydrants and aerial sprinklers networks.
- All of these components , individually tested and approved by FM, form a fire protection system with a high level of performance required for any industrial site.
- Ductile iron pipes and fittings run through all areas and irrigate all installations and buildings of plants. Their resistance to physical and chemical stresses, and pressure is crucial.
- Ductile iron is the REFERENCE material of FM underground networks.

## KEY POINTS OF THE RANGE: CONFORMITY, CONTROLS

- Pipes and fittings approved by FM approval standard conform to the EN 545 first.
- However, the FM certification referential specifies particular requirements and test methods, aiming at testing the complete capacity of pipes and fittings, with other components, the overall reliability and effectiveness of the fire protection system.
- The FM CN 1610 approval standard completes the EN 545 standard, by adding some specific performance requirements, for example :
  - The Minimum Rated Working Pressure (RWP) is 12.05 bar
  - The specified test pressures are a multiple (x2 and x4) of the RWP
  - Over the RWP value, the manufacturer has the possibility to test and have certified products with values above 12.05 bar
  - This voluntary process also requires to test with 2 and 4x the targeted certified performance .

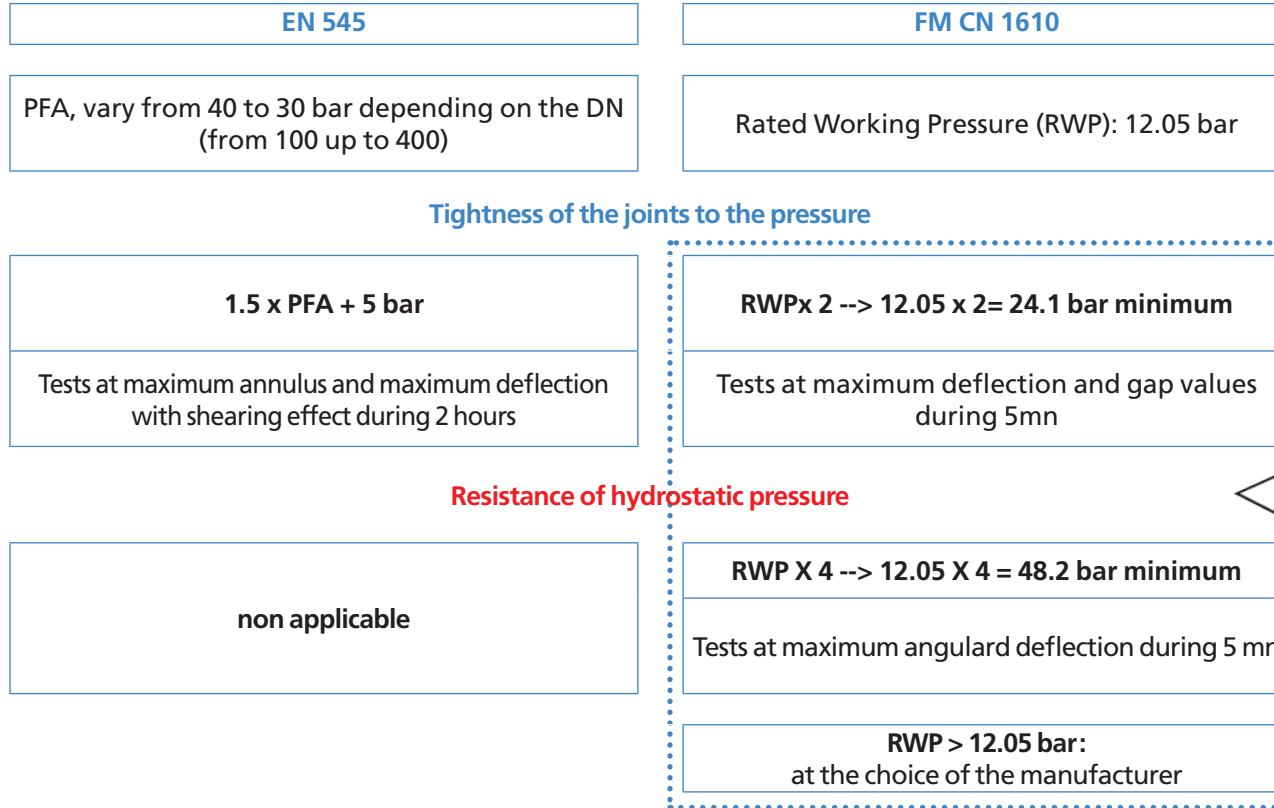


FM tests of Process and Process VI pipes and fittings



## KEY POINTS OF THE OFFER: CONFORMITY, CONTROLS

- The FM requirements and tests are complementary to the EN 545 standard.
- The certification requirements are specific.



Member of the FM Global Group

### Approval Standard for Ductile Iron Pipe and Fittings, Flexible Fittings and Couplings

Class Number 1610  
September 2006

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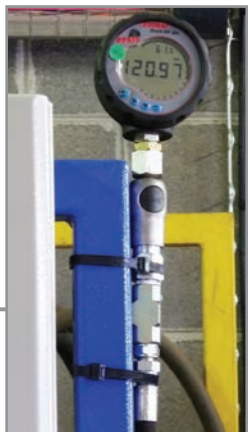
FM tests for Blutop® pipes and fittings





## KEY POINTS OF THE RANGE: HIGH CERTIFIED PERFORMANCE

- SG PAM ranges approved by the FM approvals offer high performances above the minimum requirements of the FM approval standard.
- In this way, they offer a great level of performance, durability and reliability, and provide to the engineers, site owners and their fire departments with a great safety margins, whereas ensuring a useful adaptation to any changes of fire protection systems.
- For example, a PROCESS pipe approved by FM with a 30 bar RWP is tested at 120 bar.



### Certificate of Compliance

Description	Nominal Pipe Size, mm.	Rated Working Pressure bar (psi)	Notes: (see end of listing)
<b>Pipe</b>			
<b>Standard Pipe</b>			
Standard Push-On (unrestrained)	100 through 300	25 (363)	
Standard Vi self-restrained gasket	100, 125	20 (290)	
	150	16 (232)	
	200, 250, 300	14 (203)	

*Extract of the compliance certificate to the FM 1610 approvals standards regarding the Process range (table below)*

*View of the DN200 pressure testing device's dial*

<b>"Process" Pipe</b>			
Pipe, Unrestrained (Push-On)	100	27.5 (400)	
Pipe, Unrestrained (Push-On)	150	27.5 (400)	
Pipe, Unrestrained (Push-On)	200	30 (440)	
Pipe, Unrestrained (Push-On)	250	27.5 (400)	
Pipe, Unrestrained (Push-On)	300	27.5 (400)	
Pipe, Unrestrained (Push-On)	400	21.25 (308)	

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### APPROVAL REPORT

Project No:	0003055022 Ressure 1
Class:	1610
Product Name:	Ductile Iron Pipe and Fittings
Product Type:	Ductile Iron Pipe and Fittings
Name of Listing Company:	Saint-Gobain PAM
Address of Listing Company:	21 Avenue Camille Cavalier 54700 Pont-a-Mousson, France
Customer ID:	1000001419-5
Customer website:	www.saint-gobain.com

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Date of Reissue

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## KEY POINTS OF THE RANGE:

### ADAPTED SOLUTIONS FOR ALL THE FIRE NETWORKS CONFIGURATIONS

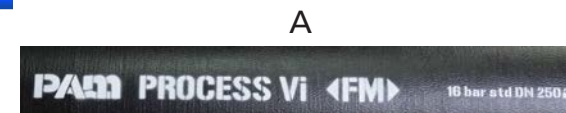
- SGPAM ranges of pipes and fittings for the fire protection pipeworks, based on installation needs.
  - 1 - PROCESS: from DN 100 up to DN 400, achievement of not restrained networks
  - 2 - PROCESS Vi: from DN 100 up to DN 400, specific pipes and joints with inserts allow achieving restrained networks when layouts or installations conditions require it
- The fittings of PROCESS and PROCESS Vi are identical. They are both available on Epoxy cataphoresis 70 µm coating and on Epoxy powder 250 µm coating.
  - 3 - BLUTOP®: DN/OD 110 & 160: Ductile iron pipes with a diameter compatible with alternative solutions in PE. Specific fittings, Epoxy Powder 250 µm coating



## KEY POINTS OF THE OFFER:

### A CLEAR AND COMPREHENSIVE MARKING OF THE CERTIFIED PRODUCTS AND CHARACTERISTICS

- Pipes: individual ink-jet marking, with certified pressures and a restrained and not restrained icon (A).
- Fittings: individuel highly resistant label with certified restrained and not restrained pressures icon (B).



All FM approval documents (plants and products) are available to download at [www.pamline.com](http://www.pamline.com)



## «PROCESS» pipes with Standard gasket DN100-400

For ductile iron pipeworks for fire protection (not restrained).

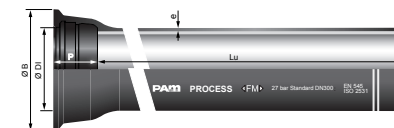
Pressure strength tested according to FM Approval Class Number 1610, including specific watertightness test of joints and mechanical resistance (hydrostatic) pressure test.

In compliance with EN545 for the other normative requirements.

References and prices of pipes do not include the supplies and the prices of joints.

DN	Lu	Pressure not restrained certified by FM	Ø DE	Ø DI	P	Ø B	metric mass
mm	m	bar	mm	mm	mm	mm	kg/m
100	6	27.5	117.8	121.4	94.5	188.0	14.85
150	6	27.5	169.7	173.4	100.5	242.0	22.15
200	6	30	221.6	225.2	106.5	295.0	30.20
250	6	27.5	273.0	276.8	105.5	352.0	42.21
300	6	27.5	324.9	328.8	107.5	409.2	55.55
400	6	21.25	427.7	431.9	112.5	516.2	79.40

reference
251912
253563
251915
251938
251937
251935



## «PROCESS» Vi pipes with Standard Vi gasket

For restrained ductile iron pipeworks for fire protection (Vi).

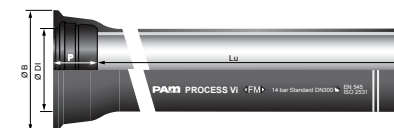
Pressure strength tested according to FM Approval Class Number 1610, including specific watertightness test of joints and mechanical resistance (hydrostatic) pressure test.

In compliance with EN545 for the other normative requirements.

References and prices of pipes do not include the supplies and the prices of joints.

DN	Lu	Pressure VI certified by FM	Ø DE	Ø DI	P	Ø B	metric mass
mm	m	bar	mm	mm	mm	mm	kg/m
100	6	18	117.8	121.4	94.5	188.0	17.25
150	6	19	169.7	173.4	100.5	242.0	25.70
200	6	19	221.6	225.2	106.5	295.0	33.50
250	6	16	273.0	276.8	105.5	352.0	47.43
300	6	14	324.9	328.8	107.5	409.2	63.85
400	6	13	427.7	431.9	112.5	516.2	91.30

reference
253549
251934
251932
251930
251929
251927



- External coating: zinc-aluminium alloy (85/15, 400g/m<sup>2</sup>, [except DN 100: zinc 200g/m<sup>2</sup>]) + black coating.

- Internal coating: cement mortar.

## «PROCESS» joints for not-restraint purpose

DN	Pressure not restrained certified by FM
mm	bar
100	27.5
150	27.5
200	30
250	27.5
300	27.5
400	21.25

reference
JSB10BA
JSB15BA
JSB20BA
JSB25BA
JSB30BA
JSB40BA

## «PROCESS» Vi insert joints for restraint purpose

DN	Pressure VI certified by FM
mm	bar
100	18
150	19
200	19
250	16
300	14
400	13

reference
JSB10CA
JSB15DA
JSB20DA
JSB25DA
JSB30CA
JSB40CA

90° (1/4) bend with Standard joint

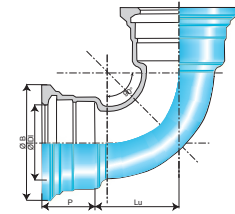
DN	Lu	P	Ø DI	Ø B	mass
mm	mm	mm	mm	mm	kg
100	105	88	121.4	187.5	10.0
150	152.5	94	173.4	241.0	18.1
200	200	100	225.5	294.0	29.2
250	252	105	277.3	351.0	49.6
300	304	110	329.3	408.3	72.7
400	436	112	432.4	515.3	141.0

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
bar	bar
25	20
25	16
25	14
25	14
25	14
15	12

Epoxy cataphoresis 70 µm coating
reference
SSB10CA00NNF
SSB15CA00NNF
SSB20CA00NNF
SSB25CA00NNF
SSB30CA00NNF
SSB40CA00NNF

A3  
A4  
A5  
A5  
A5  
D2

Epoxy Powder 250 µm coating
reference
SSB10CA00TTF
SSB15CA00TTF
SSB20CA00TTF
SSB25CA00TTF
SSB30CA00TTF
SSB40CA00TTF



45° (1/8) bend with Standard joint

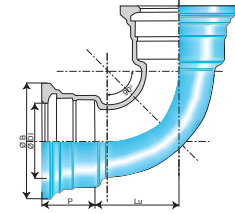
DN	Lu	P	Ø DI	Ø B	mass
mm	mm	mm	mm	mm	kg
100	65	88	121.4	187.5	8.9
150	92.5	94	173.4	241.0	15.6
200	100	100	225.5	294.0	23.7
250	136	105	277.3	351.0	40.5
300	167.5	110	329.3	408.0	59.0
400	189	112	432.4	515.3	88.5

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
bar	bar
25	20
25	16
25	14
25	14
25	14
15	12

Epoxy cataphoresis 70 µm coating
reference
SSB10CB00NNF
SSB15CB00NNF
SSB20CB00NNF
SSB25CB00NNF
SSB30CB00NNF
SSB40CB00NNF

A3  
A4  
A5  
A5  
A5  
D2

Epoxy Powder 250 µm coating
reference
SSB10CB00TTF
SSB15CB00TTF
SSB20CB00TTF
SSB25CB00TTF
SSB30CB00TTF
SSB40CB00TTF



22.5° (1/16) bend with Standard joint

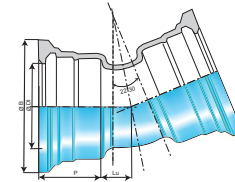
DN	Lu	P	Ø DI	Ø B	mass
mm	mm	mm	mm	mm	kg
100	35	88	121.4	187.5	7.8
150	42	94	173.4	241.0	12.2
200	51	100	225.5	294.0	18.9
250	70	105	277.3	351.0	32.2
300	70	110	329.3	408.3	42.2
400	92	112	432.4	515.3	68.7

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
bar	bar
25	20
25	16
25	14
25	14
25	14
15	12

Epoxy cataphoresis 70 µm coating
reference
SSB10CD00NNF
SSB15CD00NNF
SSB20CD00NNF
SSB25CD00NNF
SSB30CD00NNF
SSB40CD00NNF

A3  
A4  
A5  
A5  
A5  
D2

Epoxy Powder 250 µm coating
reference
SSB10CD00TTF
SSB15CD00TTF
SSB20CD00TTF
SSB25CD00TTF
SSB30CD00TTF
SSB40CD00TTF



11.25° (1/32) bend with Standard joint

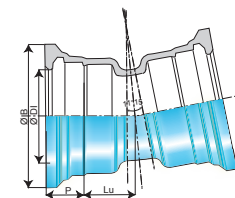
DN	Lu	P	Ø DI	Ø B	mass
mm	mm	mm	mm	mm	kg
100	40	88	121.4	187.5	7.9
150	46	94	173.4	241.0	12.6
200	52	100	225.5	294.0	19.2
250	55	105	277.3	351.0	30.5
300	50	110	329.3	408.3	39.7
400	58	112	432.4	515.3	61.5

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
bar	bar
25	20
25	16
25	14
25	14
25	14
15	12

Epoxy cataphoresis 70 µm coating
reference
SSB10CE00NNF
SSB15CE00NNF
SSB20CE00NNF
SSB25CE00NNF
SSB30CE00NNF
SSB40CE00NNF

A3  
A4  
A5  
A5  
A5  
D2

Epoxy Powder 250 µm coating
reference
SSB10CE00TTF
SSB15CE00TTF
SSB20CE00TTF
SSB25CE00TTF
SSB30CE00TTF
SSB40CE00TTF



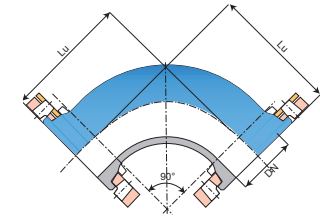


Flanged 90° (1/4) bend with mobile flanges PN16

DN	Lu	mass	Pressure certified by FM (not restrained)	PN
<i>mm</i>	<i>mm</i>	<i>kg</i>	<i>bar</i>	
100	180	14.0	16	16
150	220	25.0	16	16
200	260	40.5	16	16
250	350	64.0	16	16
300	400	91.0	16	16

Epoxy cataphoresis 70 µm coating	
reference	
BAB10CA10NNF	
BAB15CA10NNF	
BAB20CA20NNF	
BAB25CA20NNF	
BAB30CA20NNF	

Epoxy Powder 250 µm coating	
reference	
BAB10CA10TTF	
BAB15CA10TTF	
BAB20CA20TTF	
BAB25CA20TTF	
BAB30CA20TTF	

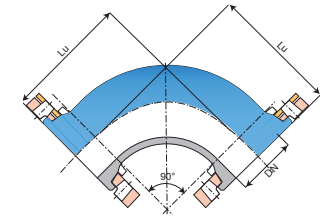


Flanged 90° (1/4) bend with mobile flanges PN25

DN	Lu	mass	Pressure certified by FM (not restrained)	PN
<i>mm</i>	<i>mm</i>	<i>kg</i>	<i>bar</i>	
100	180	14.0	25	25
150	220	25.0	25	25
200	260	40.5	25	25
250	350	64.0	25	25
300	400	91.0	25	25
400	500	171.5	15	25

Epoxy cataphoresis 70 µm coating	
reference	
BAB10CA30NNF	
BAB15CA30NNF	
BAB20CA30NNF	
BAB25CA30NNF	
BAB30CA30NNF	
BAB40CA30NNF	

Epoxy Powder 250 µm coating	
reference	
BAB10CA30TTF	
BAB15CA30TTF	
BAB20CA30TTF	
BAB25CA30TTF	
BAB30CA30TTF	
BAB40CA30TTF	

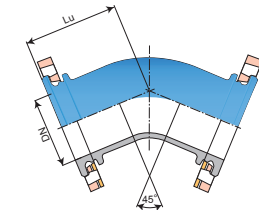


Flanged 45° (1/8) bend with mobile flanges PN16

DN	Lu	mass	Pressure certified by FM (not restrained)	PN
<i>mm</i>	<i>mm</i>	<i>kg</i>	<i>bar</i>	
100	140	13.6	16	16
150	109.0	23.0	16	16
200	131.0	34.0	16	16
250	190.0	52.9	16	16
300	210.0	73.3	16	16

Epoxy cataphoresis 70 µm coating	
reference	
BAB10CB10NNF	
BAB15CB10NNF	
BAB20CB20NNF	
BAB25CB20NNF	
BAB30CB20NNF	

Epoxy Powder 250 µm coating	
reference	
BAB10CB10TTF	
BAB15CB10TTF	
BAB20CB20TTF	
BAB25CB20TTF	
BAB30CB20TTF	

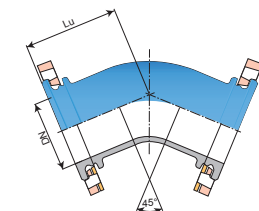


Flanged 45° (1/8) bend with mobile flanges PN25

DN	Lu	mass	Pressure certified by FM (not restrained)	PN
<i>mm</i>	<i>mm</i>	<i>kg</i>	<i>bar</i>	
100	140	13.6	25	25
150	109.0	23.0	25	25
200	131.0	34.0	25	25
250	190.0	52.9	25	25
300	210.0	73.3	25	25
400	237.5	133.0	15	25

Epoxy cataphoresis 70 µm coating	
reference	
BAB10CB30NNF	
BAB15CB30NNF	
BAB20CB30NNF	
BAB25CB30NNF	
BAB30CB30NNF	
BAB40CB30NNF	

Epoxy Powder 250 µm coating	
reference	
BAB10CB30TTF	
BAB15CB30TTF	
BAB20CB30TTF	
BAB25CB30TTF	
BAB30CB30TTF	
BAB40CB30TTF	



Flanged 22° (1/16) bend with mobile flanges PN16

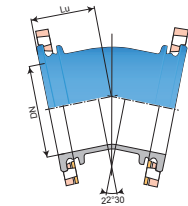
DN	Lu
mm	mm
100	110.0
150	109.0
200	131.0
250	190.0
300	210.0

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
12.0	16	16
20.4	16	16
30.0	16	16
48.0	16	16
65.5	16	16

reference	Epoxy cataphoresis 70 µm coating
BAB10CD10NNF	
BAB15CD10NNF	
BAB20CD20NNF	
BAB25CD20NNF	
BAB30CD20NNF	

reference	Epoxy Powder 250 µm coating
BAB10CD10TTF	
BAB15CD10TTF	
BAB20CD20TTF	
BAB25CD20TTF	
BAB30CD20TTF	

C  
C  
C  
C  
C



Flanged 22° (1/16) bend with mobile flanges PN25

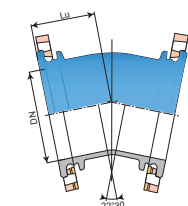
DN	Lu
mm	mm
100	110.0
150	109.0
200	131.0
250	190.0
300	210.0
400	237.5

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
12.0	25	25
20.4	25	25
30.0	25	25
48.0	25	25
65.5	25	25
113.0	15	25

reference	Epoxy cataphoresis 70 µm coating
BAB10CD30NNF	
BAB15CD30NNF	
BAB20CD30NNF	
BAB25CD30NNF	
BAB30CD30NNF	
BAB40CD30NNF	

reference	Epoxy Powder 250 µm coating
BAB10CD30TTF	
BAB15CD30TTF	
BAB20CD30TTF	
BAB25CD30TTF	
BAB30CD30TTF	
BAB40CD30TTF	

A2  
A2  
A2  
A2  
A2  
D



Flanged 11.25° (1/32) bend with mobile flanges PN16

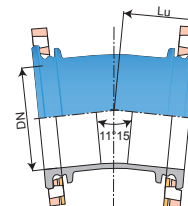
DN	Lu
mm	mm
100	115.0
150	113.0
200	132.0
250	165.0
300	175.0

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
12.3	16	16
20.5	16	16
30.0	16	16
45.7	16	16
60.7	16	16

reference	Epoxy cataphoresis 70 µm coating
BAB10CE10NNF	
BAB15CE10NNF	
BAB20CE20NNF	
BAB25CE20NNF	
BAB30CE20NNF	

reference	Epoxy Powder 250 µm coating
BAB10CE10TTF	
BAB15CE10TTF	
BAB20CE20TTF	
BAB25CE20TTF	
BAB30CE20TTF	

C  
C  
C  
C  
C



Flanged 11.25° (1/32) bend with mobile flanges PN25

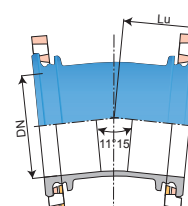
DN	Lu
mm	mm
100	115.0
150	113.0
200	132.0
250	165.0
300	175.0
400	203.0

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
12.3	25	25
20.5	25	25
30.0	25	25
45.7	25	25
60.7	25	25
106.0	15	25

reference	Epoxy cataphoresis 70 µm coating
BAB10CE30NNF	
BAB15CE30NNF	
BAB20CE30NNF	
BAB25CE30NNF	
BAB30CE30NNF	
BAB40CE30NNF	

reference	Epoxy Powder 250 µm coating
BAB10CE30TTF	
BAB15CE30TTF	
BAB20CE30TTF	
BAB25CE30TTF	
BAB30CE30TTF	
BAB40CE30TTF	

A2  
A2  
A2  
A2  
A2  
D



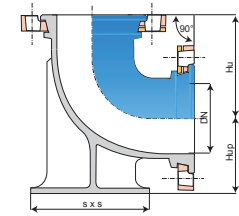


## Flanged Duckfoot bend with mobile flanges PN16

DN	Hu	Hup	mass	Pressure certified by FM (not restrained)	PN
mm	mm	mm	kg	bar	
100	180	125	18.2	16	16
150	220	160	33.5	16	16
200	260	190	51.0	16	16
250	350	225	90.0	16	16
300	400	255	124.5	16	16

Epoxy cataphoresis 70 µm coating	
reference	
BAB10CF10NNF	C
BAB15CF10NNF	C
BAB20CF20NNF	C
BAB25CF20NNF	C
BAB30CF20NNF	C

Epoxy Powder 250 µm coating	
reference	
BAB10CF10TTF	C
BAB15CF10TTF	C
BAB20CF20TTF	C
BAB25CF20TTF	C
BAB30CF20TTF	C

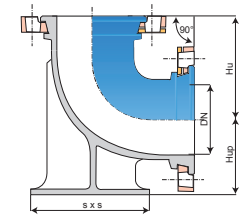


## Flanged Duckfoot bend with mobile flanges PN25

DN	Hu	Hup	mass	Pressure certified by FM (not restrained)	PN
mm	mm	mm	kg	bar	
100	180	125	18.2	25	25
150	220	160	33.5	25	25
200	260	190	51.0	25	25
250	350	225	90.0	25	25
300	400	255	124.5	25	25

Epoxy cataphoresis 70 µm coating	
reference	
BAB10CF30NNF	A2
BAB15CF30NNF	A2
BAB20CF30NNF	A2
BAB25CF30NNF	A2
BAB30CF30NNF	A2

Epoxy Powder 250 µm coating	
reference	
BAB10CF30TTF	A2
BAB15CF30TTF	A2
BAB20CF30TTF	A2
BAB25CF30TTF	A2
BAB30CF30TTF	A2



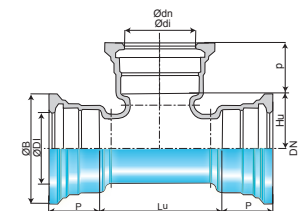
## All socket tee with Standard joint

DN	Ø dn	Lu	P	Ø Di	Ø B	Hu	P	Ø Di	mass
mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
100	100	210	88	121.4	187.5	105	88	121.4	14.9
150	100	190	94	173.4	241	140	88	121.4	21.0
150	150	305	94	173.4	241	152.5	94	173.4	27.0
200	100	195	100	225.5	294	170	88	121.4	27.5
200	150	250	100	225.5	294	177.5	94	173.4	32.3
200	200	360	100	225.5	294	180	100	225.5	40.7
250	100	234	105	277.3	351	183	88	121.4	41.3
250	150	251	105	277.3	351	164.5	94	173.4	44.6
250	200	344	105	277.3	351	168	100	225.5	53.0
250	250	404	105	277.3	351	202	105	277.3	63.6
300	100	237	110	329.3	408.3	213	88	121.4	56.0
300	150	347	110	329.3	408.3	194.5	94	173.4	64.0
300	200	347	110	329.3	408.3	198	100	225.5	68.4
300	250	467	110	329.3	408.3	207	105	277.3	83.4
300	300	467	110	329.3	408.3	233.5	110	329.3	89.9
400	200	330	176	432.4	521	154	224.5	258.5	165.5
400	250	390	176	432.4	521	160.6	276.5	265	181
400	300	440	176	432.4	521	173.5	328.5	270	197
400	400	560	176	432.4	521	176	432.4	280	259

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
bar	bar
25	20
25	16
25	16
25	14
25	14
25	14
25	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
20	14
15	13
15	13
15	13
15	13

Epoxy cataphoresis 70 µm coating	
reference	
SSB10TE0FNNF	A3
SSB15TE0FNNF	A4
SSB15TE0JNNF	A4
SSB20TE0FNNF	A5
SSB20TE0JNNF	A5
SSB20TE0KNNF	A5
SSB25TE0FNNF	B3
SSB25TE0JNNF	B3
SSB25TE0KNNF	B3
SSB25TE0LNNF	B3
SSB30TE0FNNF	B3
SSB30TE0JNNF	B3
SSB30TE0KNNF	B3
SSB30TE0LNNF	B3
SSB30TE0MNNF	B3
AFB40TE0KADF**	D3
AFB40TE0LADF**	D3
AFB40TE0MADF**	D3
AFB40TE0NADF***	D3

Epoxy Powder 250 µm coating	
reference	
SSB10TE0FTTF	A3
SSB15TE0FTTF	A4
SSB15TE0JTTF	A4
SSB20TE0FTTF	A5
SSB20TE0JTTF	A5
SSB20TE0KTTF	A5
SSB25TE0FTTF	B3
SSB25TE0JTTF	B3
SSB25TE0KTTF	B3
SSB25TE0LTTF	B3
SSB30TE0FTTF	B3
SSB30TE0JTTF	B3
SSB30TE0KTTF	B3
SSB30TE0LTTF	B3
SSB30TE0MTTF	B3
	D3
	D3
	D3
	D3



\*\* Sockets Universal Tyton    \*\*\* Sockets Universal Standard



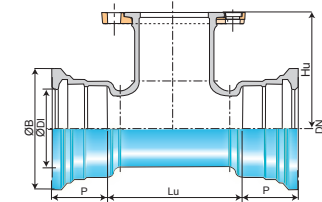
Double socket tee with flanged branch (mobile flange) with Standard joint PN16

DN	Ø dn	Lu	P	Ø DI	Ø B	Hu
mm	mm	mm	mm	mm	mm	mm
100	100	210	88.0	121.4	187.5	180.0
150	100	190	94.0	173.4	241.0	215.0
150	150	305	94.0	173.4	241.0	220.0
200	100	195	100.0	225.5	294.0	245.0
200	150	250	100.0	225.5	294.0	245.0
200	200	360	100.0	225.5	294.0	260.0
250	100	234	105.0	277.3	351.0	270.0
250	150	251	105.0	277.3	351.0	280.0
250	200	344	105.0	277.3	351.0	290.0
250	250	404	105.0	277.3	351.0	300.0
300	100	237	110.0	329.3	408.3	300.0
300	150	347	110.0	329.3	408.3	310.0
300	200	347	110.0	329.3	408.3	320.0
300	250	467	110.0	329.3	408.3	305.0
300	300	467	110.0	329.3	408.3	340.0

mass	Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)	PN
kg	bar	bar	bar
17	16	14	16
21.4	16	14	16
29.5	16	14	16
29.1	16	14	16
34.9	16	14	16
44.6	16	14	16
43.4	16	14	16
49.5	16	14	16
59.9	16	14	16
69.1	16	14	16
58.1	16	14	16
71.2	16	14	16
75.4	16	14	16
89.0	16	14	16
97.2	16	14	16

Epoxy cataphoresis 70 µm coating
reference
SSB10UD1FNNF
SSB15UD1FNNF
SSB15UD1JNNF
SSB20UD1FNNF
SSB20UD1JNNF
SSB20UD2KNNF
SSB25UD1FNNF
SSB25UD1JNNF
SSB25UD2KNNF
SSB25UD2LNNF
SSB30UD1FNNF
SSB30UD1JNNF
SSB30UD2KNNF
SSB30UD2LNNF
SSB30UD2MNNF

Epoxy Powder 250 µm coating
reference
SSB10UD1FTTF
SSB15UD1FTTF
SSB15UD1JTTF
SSB20UD1FTTF
SSB20UD1JTTF
SSB20UD2KTTF
SSB25UD1FTTF
SSB25UD1JTTF
SSB25UD2KTTF
SSB25UD2LTTF
SSB30UV1FTTF
SSB30UD1JTTF
SSB30UD2KTTF
SSB30UD2LTTF
SSB30UD2MTTF



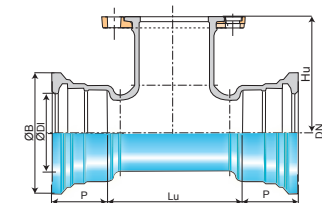
Double socket tee with flanged branch (mobile flange) with Standard joint PN25

DN	Ø dn	Lu	P	Ø DI	Ø B	Hu
mm	mm	mm	mm	mm	mm	mm
100	100	210	88.0	121.4	187.5	180.0
150	100	190	94.0	173.4	241.0	215.0
150	150	305	94.0	173.4	241.0	220.0
200	100	195	100.0	225.5	294.0	245.0
200	150	250	100.0	225.5	294.0	245.0
200	200	360	100.0	225.5	294.0	260.0
250	100	234	105.0	277.3	351.0	270.0
250	150	251	105.0	277.3	351.0	280.0
250	200	344	105.0	277.3	351.0	290.0
250	250	404	105.0	277.3	351.0	300.0
300	100	237	110.0	329.3	408.3	300.0
300	150	347	110.0	329.3	408.3	310.0
300	200	347	110.0	329.3	408.3	320.0
300	250	467	110.0	329.3	408.3	305.0
300	300	467	110.0	329.3	408.3	340.0
400	200	315	112	432.4	515.3	380
400	250	429	112	432.4	515.3	390
400	300	429	112	432.4	515.3	400
400	400	545	112	432.4	515.3	420

mass	Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)	PN
kg	bar	bar	bar
17.0	25	20	25
21.9	25	16	25
30.5	25	16	25
29.6	25	14	25
29.6	25	14	25
47.0	25	14	25
43.9	20	14	25
50.5	20	14	25
61.4	20	14	25
72.1	20	14	25
58.6	20	14	25
72.2	20	14	25
77.1	20	14	25
91.9	20	14	25
100.8	20	14	25
104.9	15	13	25
124.6	15	13	25
133.7	15	13	25
166	15	13	25

Epoxy cataphoresis 70 µm coating
reference
SSB10UD3FNNF
SSB15UD3FNNF
SSB15UD3JNNF
SSB20UD3FNNF
SSB20UD3JNNF
SSB20UD3KNNF
SSB25UD3FNNF
SSB25UD3JNNF
SSB25UD3KNNF
SSB25UD3LNNF
SSB30UD3FNNF
SSB30UD3JNNF
SSB30UD3KNNF
SSB30UD3LNNF
SSB30UD3MNNF
SSB40UD3KNNF
SSB40UD3LNNF
SSB40UD3MNNF
SSB40UD3NNNF

Epoxy Powder 250 µm coating
reference
SSB10UD3FTTF
SSB15UD3FTTF
SSB15UD3JTTF
SSB20UD3FTTF
SSB20UD3JTTF
SSB20UD3KTTF
SSB25UD3FTTF
SSB25UD3JTTF
SSB25UD3KTTF
SSB25UD3LTTF
SSB30UD3FTTF
SSB30UD3JTTF
SSB30UD3KTTF
SSB30UD3LTTF
SSB30UD3MTTF
SSB40UD3KTTF
SSB40UD3LTTF
SSB40UD3MTTF
SSB40UD3NTTF



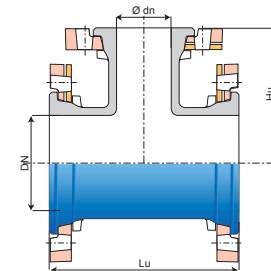
All flanged tee with mobile flanges PN16

DN	Ø dn	Lu	Hu
mm	mm	mm	mm
100	100	360	180
150	100	440	210
150	150	440	220
200	100	520	240
200	150	520	250
200	200	520	260
250	100	430	270
250	150	447	280
250	200	540	290
250	250	600	300
300	100	450	300
300	150	560	310
300	200	560	320
300	250	680	305
300	300	680	340

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
20.5	16	16
33.5	16	16
38.0	16	16
48.0	16	16
52.1	16	16
55.5	16	16
56.7	16	16
68.9	16	16
80.0	16	16
92.0	16	16
74.3	16	16
96.0	16	16
108.0	16	16
117.0	16	16
126.0	16	16

Epoxy cataphoresis 70 µm coating
reference
BAB10UE1FNNF
BAB15UE1FNNF
BAB15UE1JNNF
BAB20UE2FNNF
BAB20UE2JNNF
BAB20UE2KNNF
BAB25UE2FNNF
BAB25UE2JNNF
BAB25UE2KNNF
BAB25UE2LNNF
BAB30UE2FNNF
BAB30UE2JNNF
BAB30UE2KNNF
BAB30UE2LNNF
BAB30UE2MNNF

Epoxy Powder 250 µm coating
reference
BAB10UE1FTTF
BAB15UE1FTTF
BAB15UE1JTTF
BAB20UE2FTTF
BAB20UE2JTTF
BAB20UE2KTTF
BAB25UE2FTTF
BAB25UE2JTTF
BAB25UE2KTTF
BAB25UE2LTTF
BAB30UE2FTTF
BAB30UE2JTTF
BAB30UE2KTTF
BAB30UE2LTTF
BAB30UE2MTTF



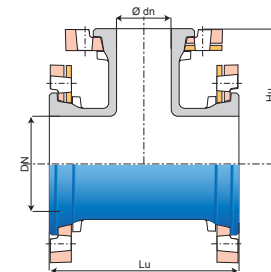
All flanged tee with mobile flanges PN25

DN	Ø dn	Lu	Hu
mm	mm	mm	mm
100	100	360	180
150	100	440	210
150	150	440	220
200	100	520	240
200	150	520	250
200	200	520	260
250	100	430	270
250	150	447	280
250	200	540	290
250	250	600	300
300	100	450	300
300	150	560	310
300	200	560	320
300	250	680	305
300	300	680	340
400	200	605	380
400	250	724	390
400	300	724	400
400	400	840	420

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
20.5	25	25
33.5	25	25
38.0	25	25
48.0	25	25
52.1	25	25
55.5	25	25
56.7	20	25
68.9	20	25
80.0	20	25
92.0	20	25
74.3	20	25
96.0	20	25
108.0	20	25
117.0	20	25
126.0	20	25
164.9	15	25
187.0	15	25
193.7	15	25
235.0	15	25

Epoxy cataphoresis 70 µm coating
reference
BAB10UE3FNNF
BAB15UE3FNNF
BAB15UE3JNNF
BAB20UE3FNNF
BAB20UE3JNNF
BAB25UE3KNNF
BAB25UE3FNNF
BAB25UE3JNNF
BAB25UE3KNNF
BAB25UE3LNNF
BAB30UE3FNNF
BAB30UE3JNNF
BAB30UE3KNNF
BAB30UE3LNNF
BAB30UE3MNNF
BAB40UE3KNNF
BAB40UE3LNNF
BAB40UE3MNNF
BAB40UE3NNNF

Epoxy Powder 250 µm coating
reference
BAB10UE3FTTF
BAB15UE3FTTF
BAB15UE3JTTF
BAB20UE3FTTF
BAB20UE3JTTF
BAB20UE3KTTF
BAB25UE3FTTF
BAB25UE3JTTF
BAB25UE3KTTF
BAB25UE3LTTF
BAB30UE3FTTF
BAB30UE3JTTF
BAB30UE3KTTF
BAB30UE3LTTF
BAB30UE3MTTF
BAB40UE3KTTF
BAB40UE3LTTF
BAB40UE3MTTF
BAB40UE3NTTF



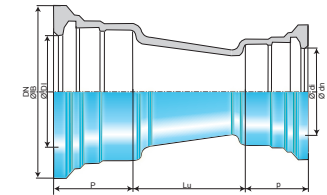
Taper with Standard joint

DN	Ø dn	Lu	P	Ø DI	Ø B	p	Ø Di	mass
mm	mm	mm	mm	mm	mm	mm	mm	kg
150	100	130	94	173.4	241	88	121.4	11.1
200	100	230	100	225.5	294	88	121.4	17.3
200	150	125	100	225.5	294	94	173.4	16.7
250	150	225	105	277.3	351	94	173.4	26.0
250	200	125	105	277.3	351	100	225.5	25.3
300	150	321.5	110	329.3	408.3	94	173.4	36.0
300	200	222	110	329.3	408.3	100	225.5	36.0
300	250	123	110	329.3	408.3	105	277.3	36.0
400	250	335	112	432.4	515.3	105	277.3	65.0
400	300	260	112	432.4	515.3	110	329.3	60.0

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
bar	bar
25	16
25	14
25	14
25	14
25	14
25	14
25	14
25	14
25	14
25	14
15	13
15	13

Epoxy cataphoresis 70 µm coating
reference
SSB15VE0FNNF
SSB20VE0FNNF
SSB20VE0JNNF
SSB25VE0JNNF
SSB25VE0KNNF
SSB30VE0JNNF
SSB30VE0KNNF
SSB30VE0LNNF
SSB40VE0LNNF
SSB40VE0MNNF

Epoxy Powder 250 µm coating
reference
SSB15VE0FTTF
SSB20VE0FTTF
SSB20VE0JTF
SSB25VE0JTF
SSB25VE0KTF
SSB30VE0JTF
SSB30VE0KTF
SSB30VE0LTF
SSB40VE0LTF
SSB40VE0MTTF



Flanged taper with mobile flanges PN16

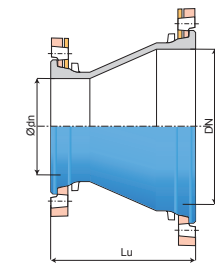
DN	Ø dn	Lu
mm	mm	mm
150	100	306
200	100	385
200	150	304
250	150	319
250	200	300
300	150	424
300	200	323
300	250	300

mass
kg
17.2
24.7
26.0
38.0
37.0
50.0
53.1
58.3

Pressure certified by FM (not restrained)	PN
bar	
16	16
16	16
16	16
16	16
16	16
16	16
16	16
16	16
16	16

Epoxy cataphoresis 70 µm coating
reference
BAB15VE1FNNF
BAB20VE2FNNF
BAB20VE2JNNF
BAB25VE2JNNF
BAB25VE2KNNF
BAB30VE2JNNF
BAB30VE2KNNF
BAB30VE2LNNF

Epoxy Powder 250 µm coating
reference
BAB15VE1FTTF
BAB20VE2FTTF
BAB20VE2JTF
BAB25VE2JTF
BAB25VE2KTF
BAB30VE2JTF
BAB30VE2KTF
BAB30VE2LTF



Flanged taper with mobile flanges PN25

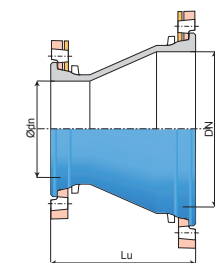
DN	Ø dn	Lu
mm	mm	mm
150	100	306
200	100	385
200	150	304
250	150	319
250	200	300
300	150	424
300	200	323
300	250	300

mass
kg
17.2
24.7
26.0
38.0
37.0
50.0
53.1
58.3

Pressure certified by FM (not restrained)	PN
bar	
25	25
25	25
25	25
25	25
25	25
25	25
25	25
25	25
25	25

Epoxy cataphoresis 70 µm coating
reference
BAB15VE3FNNF
BAB20VE3FNNF
BAB20VE3JNNF
BAB25VE3JNNF
BAB25VE3KNNF
BAB30VE3JNNF
BAB30VE3KNNF
BAB30VE3LNNF

Epoxy Powder 250 µm coating
reference
BAB15VE3FTTF
BAB20VE3FTTF
BAB20VE3JTF
BAB25VE3JTF
BAB25VE3KTF
BAB30VE3JTF
BAB30VE3KTF
BAB30VE3LTF



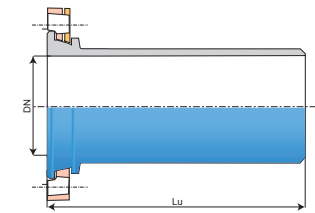


Flanged spigot with mobile flanges PN16

DN	Lu	mass	Pressure certified by FM (not restrained)	PN
mm	mm	kg	bar	
100	350	6.50	16	16
150	400	14.96	16	16
200	400	22.00	16	16
250	400	32.02	16	16
300	450	41.62	16	16

Epoxy cataphoresis 70 µm coating	
reference	
NEB10BU10NNF	C
NEB15BU10NNF	C
NEB20BU20NNF	C
NEB25BU20NNF	C
NEB30BU20NNF	C

Epoxy Powder 250 µm coating	
reference	
SEB10BU10TTF	C
SEB15BU10TTF	C
SEB20BU20TTF	C
SEB25BU20TTF	C
SEB30BU20TTF	C

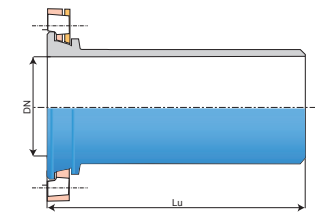


Flanged spigot with mobile flanges PN25

DN	Lu	mass	Pressure certified by FM (not restrained)	PN
mm	mm	kg	bar	
100	350	6.50	25	25
150	400	14.96	25	25
200	400	22.00	25	25
250	400	32.02	25	25
300	450	41.62	25	25
400	480	83.0	21.25	25

Epoxy cataphoresis 70 µm coating	
reference	
NEB10BU30NNF	A2
SEB15BU30NNF	A2
NEB20BU30NNF	A2
SEB25BU30NNF	A2
SEB30BU30NNF	A2
SEB40BU30NNF	B2

Epoxy Powder 250 µm coating	
reference	
SEB10BU30TTF	A2
SEB15BU30TTF	A2
SEB20BU30TTF	A2
SEB25BU30TTF	A2
SEB30BU30TTF	A2
SEB40BU30TTF	B2

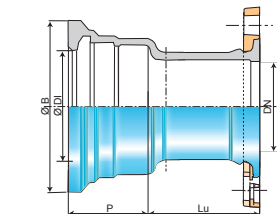


Flanged socket with Standard Joint / PN16

DN	Lu	P	Ø DI	Ø B	mass	Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)	PN
mm	mm	mm	mm	mm	kg	bar	bar	
100	110	88	121.4	187.5	8.7	16	16	16
150	115	94	173.4	241.0	14.8	16	16	16
200	120	100	225.5	294.0	23.5	16	14	16
250	135	105	277.3	351.0	33.9	16	14	16
300	130	110	329.3	408.3	44.9	16	14	16

Epoxy cataphoresis 70 µm coating	
reference	
SSB10BE10NNF	C
SSB15BE10NNF	C
SSB20BE20NNF	C3
SSB25BE20NNF	C3
SSB30BE20NNF	C3

Epoxy Powder 250 µm coating	
reference	
SSB10BE10TTF	C
SSB15BE10TTF	C
SSB20BE20TTF	C3
SSB25BE20TTF	C3
SSB30BE20TTF	C3

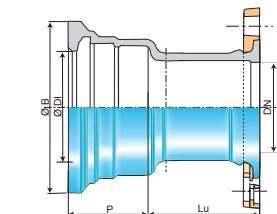


Flanged socket with Standard Joint / PN25

DN	Lu	P	Ø DI	Ø B	mass	Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)	PN
mm	mm	mm	mm	mm	kg	bar	bar	
100	110	88	121.4	187.5	10.0	25	20	25
150	115	94	173.4	241.0	14.8	25	16	25
200	120	100	225.5	294.0	23.5	25	14	25
250	135	105	277.3	351.0	33.9	25	14	25
300	130	110	329.3	408.3	44.9	25	14	25
400	140	112	432.4	515.3	78.0	21	13	25

Epoxy cataphoresis 70 µm coating	
reference	
SSB10BE30NNF	A3
SSB15BE30NNF	A4
SSB20BE30NNF	A5
SSB25BE30NNF	A5
SSB30BE30NNF	A5
SSB40BE30NNF	B3

Epoxy Powder 250 µm coating	
reference	
SSB10BE30TTF	A3
SSB15BE30TTF	A4
SSB20BE30TTF	A5
SSB25BE30TTF	A5
SSB30BE30TTF	A5
SSB40BE30TTF	B3



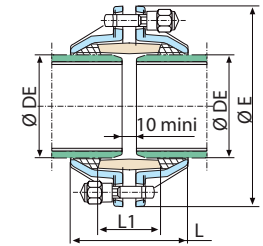
## Link collar

DN	DE mini	DE maxi	L1
mm	mm	mm	mm
100	117	120	65
150	168	172	75
200	220	223	80
250	272	275	90
300	323	327	95

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
6.18	20	25
9.60	16	16
14.00	16	16
18.10	16	16
22.20	16	16

reference
MCB10KAEHTTF
MCB15KADHTTF
MCB20KADHTTF
MCB25KADHTTF
MCB30KADHTTF

B2  
C  
C  
C  
C



## Blank flange PN16

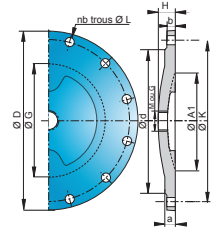
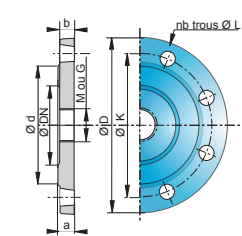
DN	Ø D
mm	mm
100	235
150	300
200	360
250	425
300	485

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
4.8	16	16
8.6	16	16
13.9	16	16
22.0	16	16
33.0	16	16

Epoxy cataphoresis 70 µm coating
reference
BBB10QN20NNF
BBB15QN20NNF
BBB20QN20NNF
BBB25QN20NNF
BBB30QN20NNF

C  
C  
C  
C  
C

Epoxy Powder 250 µm coating
reference
BBB10QN20TTF
BBB15QN20TTF
BBB20QN20TTF
BBB25QN20TTF
BBB30QN20TTF



## Blank flange PN25

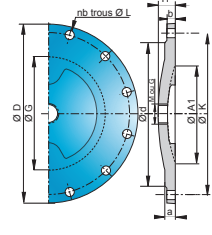
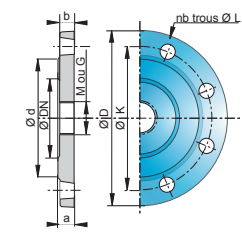
DN	Ø D
mm	mm
100	235
150	300
200	360
250	425
300	485
400	620

mass	Pressure certified by FM (not restrained)	PN
kg	bar	
4.8	25	25
8.6	25	25
13.9	25	25
22.0	25	25
33.0	25	25
63.0	21.25	25

Epoxy cataphoresis 70 µm coating
reference
BBB10QN30NNF
BBB15QN30NNF
BBB20QN30NNF
BBB25QN30NNF
BBB30QN30NNF
BBB40QN20NNF

A2  
A2  
A2  
A2  
A2  
B2

Epoxy Powder 250 µm coating
reference
BBB10QN30TTF
BBB15QN30TTF
BBB20QN30TTF
BBB25QN30TTF
BBB30QN30TTF
BBB40QN20TTF



Reducing flange T1 PN16

DN	Ø D
<i>mm</i>	<i>mm</i>
200	100
250	100
300	200

mass	Pressure certified by FM (not restrained)	PN
<i>kg</i>	<i>bar</i>	
10.7	16	16
17.9	16	16
29.00	16	16

Epoxy cataphoresis 70 µm coating	
reference	
BBB20RN2FNNGF	
BBB25RN2FNNGF	
BBB30RN2KNNGF	

C  
C  
C



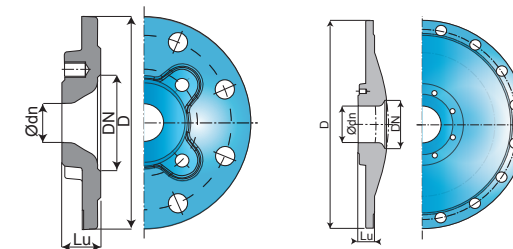
Reducing flange T1 PN25

DN	Ø D
<i>mm</i>	<i>mm</i>
200	100
250	100
300	200

mass	Pressure certified by FM (not restrained)	PN
<i>kg</i>	<i>bar</i>	
16.5	25	25
25.6	25	25
	25	25

Epoxy cataphoresis 70 µm coating	
reference	
BBB20RN3FNNGF	
BBB25RN3FNNGF	
Please advise	

A2  
A2  
A2



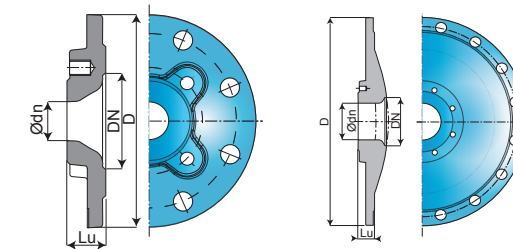
Reducing flange T2 PN16

DN	Ø D
<i>mm</i>	<i>mm</i>
300	100
300	150

mass	Pressure certified by FM (not restrained)	PN
<i>kg</i>	<i>bar</i>	
24.9	16	16
25.7	16	16

Epoxy cataphoresis 70 µm coating	
reference	
BBB30RN2FNNGF	
BBB30RN2JNNGF	

C  
C



Reducing flange T2 PN25

DN	Ø D
<i>mm</i>	<i>mm</i>
300	100
300	150

mass	Pressure certified by FM (not restrained)	PN
<i>kg</i>	<i>bar</i>	
	25	25
	25	25

Epoxy cataphoresis 70 µm coating	
reference	
Please advise	
Please advise	

C  
C





**BLUTOP® pipes**



BLUTOP® pipes DN/OD 110-160, with BLUTOP®, BLUTOP® Vi, and BLUTOP® Vi+ joints.

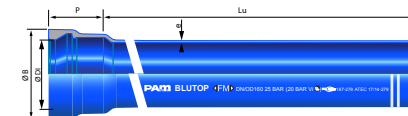
For **restrained (Vi)** and **not restrained (NV)** ductile iron networks for fire protection.

According to FM Approval Class Number 1610 referential, to the 1610 ISO 16631:2016 norm, and to CSTB 17/14-279 technical advice.

The FM Blutop® performances concern only the assembling between ductile iron pipes and fittings, and the connected gaskets.

DN	Lu	Pressure not restrained certified by FM	Pressure Vi certified by FM	Ø DE	Ø DI	P	Ø B	metric mass
mm	m	bar	bar	mm	mm	mm	mm	kg/m
110	6.000	25	25	110.0	112.8	87.0	149.5	7.600
160	6.000	25	20	160.0	163.3	97.5	202.0	11.800

reference	
251914	
251918	



- External coating: zinc-aluminium (400 g/m<sup>2</sup>) + blue epoxy paint (thickness 100 microns).
- Internal coating: ultramarine blue thermoplastic polymer DUCTAN – thickness 300 microns.



**BLUTOP® joints for not-restraint purpose**



Ø DE	joint	Pressure not restrained certified by FM
mm		bar
110	BLUTOP®	25
160	BLUTOP®	25

reference	
JXM11BA	
JXM16BA	

**BLUTOP® Vi and Vi+ inserts joints for restraint purpose**



Ø DE	joint	Pressure Vi certified by FM
mm		bar
110	BLUTOP® Vi+	25
160	BLUTOP® Vi	20

reference	
JXM11CAF	
JXM16CA	

The Vi+ DN 110 FM joint is specifically made of 13 metallic inserts.



Joint Vi+

**BLUTOP® bends**

DN	angle	Ø DE	P	Lu	mass
<i>mm</i>	<i>degree</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
110	90° (1/4)	110	99.0	85.0	7.1
110	45°(1/8)	110	99.0	60.0	6.2
110	22°30 (1/16)	110	99.0	30.0	5.5
110	11°15 (1/32)	110	99.0	30.0	5.8

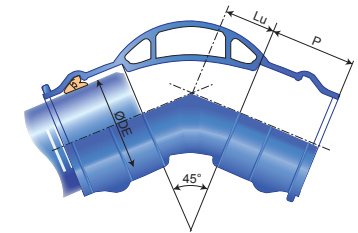
160	90° (1/4)	160	114.0	130.0	12.3
160	45°(1/8)	114	114.0	70.0	10.3
160	22°30 (1/16)	160	114.0	35.0	9.2
160	11°15 (1/32)	160	114.0	35.0	9.1

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
<i>bar</i>	<i>bar</i>
25	25
25	25
25	25
25	25

25	20
25	20
25	20
25	20

reference	
KXM11CA00TTF	A2
KXM11CB00TTF	A2
KXM11CD00TTF	A2
KXM11CE00TTF	A2

KXM16CA00TTF	A2
KXM16CB00TTF	A2
KXM16CD00TTF	A2
KXM16CE00TTF	A2

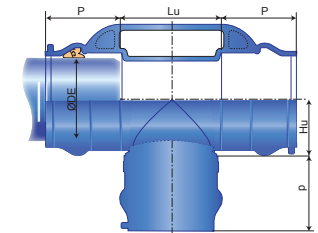


**BLUTOP® all sockets tee**

DN/OD	Ø DE	P	p	Lu	Hu	mass
<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
110	110X110	99.0	99.0	134.0	67.0	8.7
160	160X110	114.0	99.0	125.0	92.0	13.0
160	160X160	114.0	114.0	175.0	92.0	15.1

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
<i>bar</i>	<i>bar</i>
25	25
25	20
25	20

reference	
KXM11TD3FTTF	A2
KXM16TD3FTTF	A3
KXM16TD3JTTF	A3

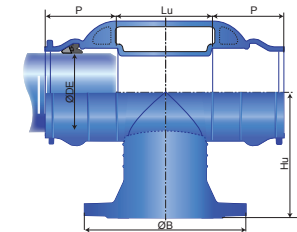


**BLUTOP® double socket tee with flanged branch, Blutop® Joint**

DN/OD	Ø DE	P	p	Lu	Hu	Ø ext. B	mass
<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
110	110X100	100	99.0	125.0	170.0	235.0	12.4
160	160X100	100	114.0	125.0	205.0	235.0	17.0
160	160X150	150	114.0	175.0	220.0	300.0	21.6

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
<i>bar</i>	<i>bar</i>
25	25
25	20
25	20

reference	
KXM11TD3FTTF	A2
KXM16TD3FTTF	A3
KXM16TD3JTTF	A3



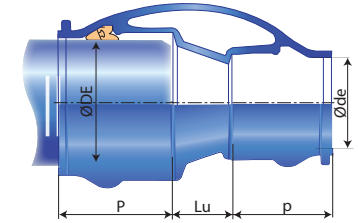
**BLUTOP® taper**

DN/OD	Ø DE	Ø de	P	p	Lu	mass
<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
<b>160</b>	160	110	114.0	99.0	55.0	7.4

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
<i>bar</i>	<i>bar</i>
<b>25</b>	20

reference
KXM16VE0ETTF

A3



**BLUTOP® sliding collar**

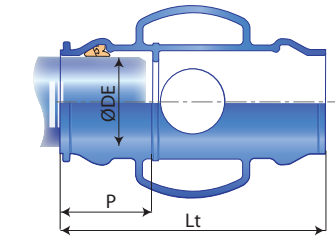
DN/OD	Ø DE	P	L	mass
<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
<b>110</b>	110	99.0	275	7.3
<b>160</b>	160	114.0	315	10.7

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
<i>bar</i>	<i>bar</i>
<b>25</b>	25
<b>25</b>	20

reference
KXM11MM00TTF
KXM16MM00TTF

A2

A3



**BLUTOP® flanged socket with Standard Joint**

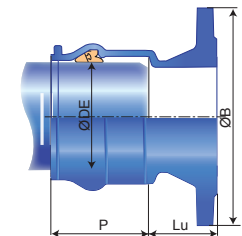
DN/OD	Ø DE	Ø dn	p	Lu	Ø B	mass
<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
<b>110</b>	110	100	99.0	68	235	7.4
<b>160</b>	160	150	114.0	68	300	12.1

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
<i>bar</i>	<i>bar</i>
<b>25</b>	25
<b>25</b>	20

reference
KXM11BE3FTTF
KXM16BE3JTF

A2

A3



**BLUTOP® flanged spigot**

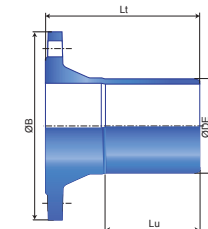
DN/OD	Ø DE	Ø B	L	Lu	mass
<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
<b>110</b>	110	235	180	110	6.7
<b>160</b>	160	300	197	127	12.1

Pressure certified by FM (not restrained)	Pressure certified by FM (Vi restrained)
<i>bar</i>	<i>bar</i>
<b>25</b>	25
<b>25</b>	20

reference
KXM11BU3FTTF
KXM16BU3JTF

A2

A3



## KEY POINTS OF THE OFFER: FUNCTIONALITIES

- Gate valves installed on fire protection pipelines are always in the «open» position: no accidental closing is possible.
- Gate valves are also fitted with:
  - a position indicator indicating that the valve is on the «open position»,
  - a locking device of the opening and closing mechanism (handwheel or handle)
- EURO® 20 gate valves (to DN 100 up to 400) approved «FM » include:
  - EURO® 21 flange gate valves, long spacing - Series 15 (DN + 200mm) according to the EN 558-1
  - EURO® 23 flange gate valves, short spacing- Series 14 (0,4 DN + 150mm) according to the EN 558-1
- EURO® 20 gate valves «FM» approved have only a clockwise closing direction.
- EURO® 20 gate valves «FM» approved can be equipped with:
  - a post indicator or
  - a wall indicator.
- Post indicator and wall indicator can be equipped with a control valve supervisory switch (PCVS) which remotely signals the opening position of the gate valve.
- EURO® 20 NG «FM» approved is usually used buried and equipped with a post indicator «FM» approved that allows remotely the operation, the locking and the viewing of the valve gate «open/closed» position.

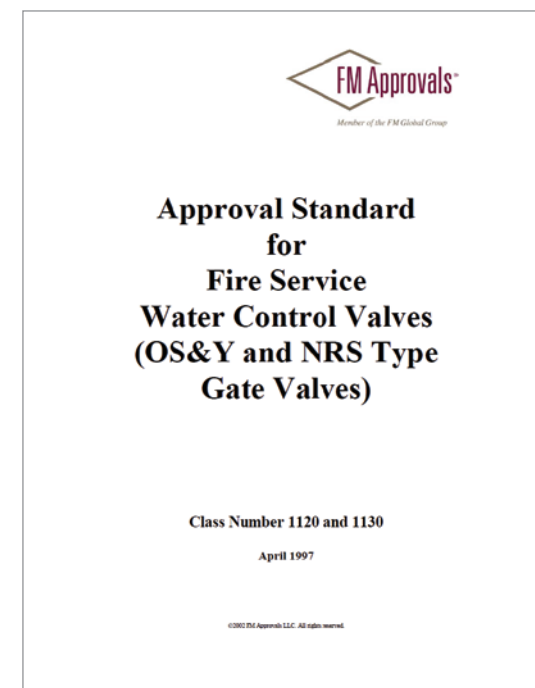


## KEY POINTS OF THE OFFER: CONFORMITY, CONTROLS

- EURO® 20 gate valves «FM» approved conform with European safety standards.
- To apply for FM certification, they must in addition comply with specific requirements of the approval standard: «Approval Standard for Fire Service Water Control Valves (OS&Y and NRS Type Gate Valves). Class Number 1120/1130 April 1997».
- The requirements of the «FM CN 1120 & 1130» exceed EN standards. For example:
  - Mechanical resistance tests at the maximal torque

**Resistance of valves to opening - closing stresses**  
Maximum torques applied during opening and closing

DN	EN 1074 1&2	FM CN 1120 / 130
	(Nm)	(Nm)
100	200	271
125	250	340
150	300	407
200	400	542
250	500	814
300	300	1085
400	800	1390



## KEY POINTS OF THE OFFER: CONFORMITY, CONTROLS

- Tightness tests of the high pressure sitting

Tightness of sitting at high pressure

<b>EN 1074 1&amp;2</b>	<b>FM CN 1120/130</b>
1.1 x PFA	2 x PFA

- Mechanical resistance of the top flanges

Resistance of bearing flanges for post & wall indicators  
Load application on post/wall indicators bearing flange

<b>EN 1074 1&amp;2</b>	<b>FM CN 1120/130</b>
none	2.95 tons



- The gate valves are individually identified and traced by means of two riveted tags:
  - A: All the performance indications certified by FM Approvals
  - B: All the useful indications for the traceability: year of manufacture, unique identification number
- The datas are recorded at the factory quality department in Toul (54).





- EURO® 20 type 21 and 23 without flanges, with cap top AWWA
- EURO® 20 type 21 and 23 with flanges and cap top AWWA
  - DN100–300 (type 21) and DN100-400 (type 23)

## EURO® 20 approved by FM with and without flanges

mm	DN inch	pressure certified by FM (bar)	pressure certified by FM (psi)	spacing between flanges	PN	without flange / with cap top AWWA		with flange / with cap top AWWA	
						reference	mass kg	reference	mass kg
100	4	16	235	type 21-Series S15	10/16	RDB10AQCHR	20.8	RDB10AMCHR	33
				type 23-Series S14	10/16	RDB10BQCHR	19.8	RDB10BMCHR	31
type 21-Series S15	10/16			RDB12AQCHR	28.9	RDB12AMCHR	41		
type 23-Series S14	10/16			RDB12BQCHR	26.4	RDB12BMCHR	38.5		
type 21-Series S15	10/16			RDB15AQCHR	36.9	RDB15AMCHR	50		
type 23-Series S14	10/16			RDB15BQCHR	33.2	RDB15BMCHR	46.3		
200	8			10	RDB20AQBHR	76.2	RDB20AMBHR	95	
					RDB20AQCHR	76.2	RDB20AMCHR	95	
				16	RDB20BQBHR	68.2	RDB20BMBHR	87	
					RDB20BQCHR	68.2	RDB20BMCHR	87	
250	10	14	200	type 21-Series S15	10	RDB25AQBHR	121.8	RDB25AMBHR	148
					16	RDB25AQCHR	121.8	RDB25AMCHR	148
				type 23-Series S14	10	RDB25BQBHR	110.0	RDB25BMBHR	136.2
					16	RDB25BQCHR	110.0	RDB25BMCHR	136.2
300	12			type 21-Series S15	10	RDB30AQBHR	182.2	RDB30AMBHR	159
					16	RDB30AQCHR	196.3	RDB30AMCHR	159
				type 23-Series S14	10	RDB30BQBHR	196.3	RDB30BMBHR	182.4
					16	RDB30BQCHR	196.3	RDB30BMCHR	182.4
400	16	12	175	type 23-Series S14	10	REB40BQBHR	299.5	REB40BMBHR	322.7
					16	REB40BQCHR	299.5	REB40BMCHR	322.7

Without flanges



With flanges



- EURO® 20 type 21 and 23 with «wall indicator» without electrical detector.
- EURO® 20 type 21 and 23 with «post indicator» without electrical detector.
- The post-indicator and the wall-indicator can be equipped with a control valve supervisory switch (PCVS) which signals remotely the opening position of the gate.
- The EURO® 20 NG approved «FM» is usually used buried and equipped with a post indicator approved «FM» that allows remotely the manoeuvre, the locking and the viewing of the valve opening.

## EURO® 20 approved by FM with wall / post indicator

mm	DN inch	pressure certified by FM (bar)	pressure certified by FM (psi)	spacing between flanges	PN	E20 with «Wall indicator» *		E20 with «Post indicator» *			
						reference	mass kg	reference	mass kg		
100	4	16	235	type 21-Series S15	10/16	RDB10AMCHW	64	RDB10AMCHP	173		
				type 23-Series S14	10/16	RDB10BMCHW	62	RDB10BMCHP	171		
type 21-Series S15	10/16			RDB12AMCHW	72	RDB12AMCHP	181				
type 23-Series S14	10/16			RDB12BMCHW	70	RDB12BMCHP	179				
125	5			type 21-Series S15	10/16	RDB15AMCHW	81	RDB15AMCHP	190		
				type 23-Series S14	10/16	RDB15BMCHW	78	RDB15BMCHP	187		
150	6			type 21-Series S15	10	RDB20AMBHW	126	RDB20AMBHP	235		
				type 23-Series S14	16	RDB20AMAHW	126	RDB20AMAHP	235		
200	8			type 21-Series S15	10	RDB20BMBHW	120	RDB20BMBHP	229		
				type 23-Series S14	16	RDB20BMAHW	120	RDB20BMAHP	229		
250	10	14	200	type 21-Series S15	10	RDB25AMBHW	179	RDB25AMBHP	288		
				type 23-Series S14	16	RDB25AMAHW	179	RDB25AMAHP	288		
type 21-Series S15	10			RDB25BMBHW	167	RDB25BMBHP	276				
type 23-Series S14	16			RDB25BMAHW	167	RDB25BMAHP	276				
300	12			type 21-Series S15	10	RDB30AMBHW	205	RDB30AMBHP	349		
				type 23-Series S14	16	RDB30AMAHW	240	RDB30AMAHP	349		
400	16			type 21-Series S15	10	RDB30BMBHW	181	RDB30BMBHP	325		
				type 23-Series S14	16	RDB30BMAHW	181	RDB30BMAHP	325		
400	16			12	175	type 21-Series S15	10	REB40BMBHW	240	REB40BMBHP	393
						type 23-Series S14	16	REB40BMAHW	240	REB40BMAHP	393

Wall indicator



Post indicator



Potter PCVS position indicator of opening valves.  
Can be installed on all valves and all DN.  
Reference: 162148

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