

NEW

ENSIGN AGILIUM®

30% LIGHTER

20% LESS CO₂e

ENSIGN AGILIUM®

High performance drainage system

ENSIGN AGILIUM®

**LIGHTER PRODUCT,
LIGHTER IMPACT
ON THE PLANET**



* 30 % is the average pipe weight reduction compared to the standard Ensign range.

** 20 % is the reduction of CO2e in the production stage, compared to the standard range (according to the respective EPDs).

SUMMARY

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PAM BUILDING

For 150 years, we have been designing, manufacturing and marketing high-quality drainage systems for sanitary and rainwater drainage in buildings. We work exclusively with cast iron, a noble and durable material, of which we are specialists and market leaders.

Our mission: the safety and durability of buildings

Our cast iron solutions ensure the comfort, safety and durability of the most demanding residential and commercial buildings. Their exceptional characteristics allow them to contribute to HQE, BREEAM, LEED and other international environmental certifications.



Our greatest strength : our teams

We rely on our technical know-how in order to remain the market-leading supplier of cast iron drainage solutions.

This is why PAM Building capitalises on the skills of its teams, and every year, integrates young graduates in apprenticeships or advanced training.

Thanks to our unique commercial approach, we have become a technical solutions provider able to anticipate our customers' expectations.

Our technical team is available from the conception to the completion of a project.

Our products, our people and all our teams are here to help you make the world a more beautiful and sustainable home together.





Our promise: to reduce our impact on the environment

Our 2025 vs. 2010 goals:



- 40 %
energy consumption



- 97 %
discharges
of industrial water



- 84 %
non-recovered waste

**SAFE AND
SUSTAINABLE
BY NATURE**

Our commitment to reducing CO2 emissions by 2030 :

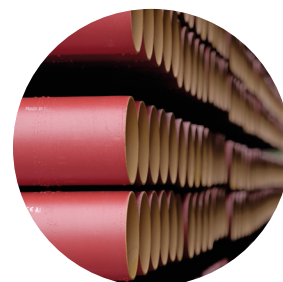
- 80% compared to 2017

At the heart of the circular economy, our DNA: recycling of metal waste

Our products are made of 99% recycled materials (mainly scrap metal), which can be recycled 100% indefinitely.

Cast iron is a simple and sustainable material that allows a smart reuse of materials. Resistant, reliable and durable, cast iron has a bright future ahead of it.

In 2021, we recycled the equivalent of of 21,000 cars.



01

NEW ENSIGN AGILIUM®

INCREASED EASE OF INSTALLATION,
100% COMPATIBLE WITH EXISTING RANGES
AND STILL AS EFFICIENT AS EVER



01

NEW
ENSIGN AGILIUM®

NEW ENSIGN AGILIUM®

PAM Building launches a new drainage solution that reduces its environmental impact and facilitates the daily work of installers. An innovation that is part of our eco-design approach.

30% lighter - easier to carry and faster to install.

SEE PAGE 18



Compact fittings - space saving in constrained areas.

SEE PAGE 19



20% reduction in carbon emissions - better for our planet.

SEE PAGE 15



ENSIGN AGILIUM®: INCREASED EASE OF INSTALLATION, 100% COMPATIBLE WITH EXISTING RANGES AND STILL AS EFFICIENT.



Fire safety

Ensign Agilium® cast iron is a non-combustible metallic material.

A1 fire rated and fire resistant for up to 2 hours, protecting both people and property.

SEE PAGE 12



Durability

Due to their exceptional mechanical properties, cast iron drainage systems prevent the worry of untimely and costly repairs.

SEE PAGE 14



Acoustic comfort

Noise is bad for your health. Ensign Agilium® cast iron systems easily meet the industry guidelines achieving exceptional performance for high acoustic comfort (luxury hotels, hospitals...)

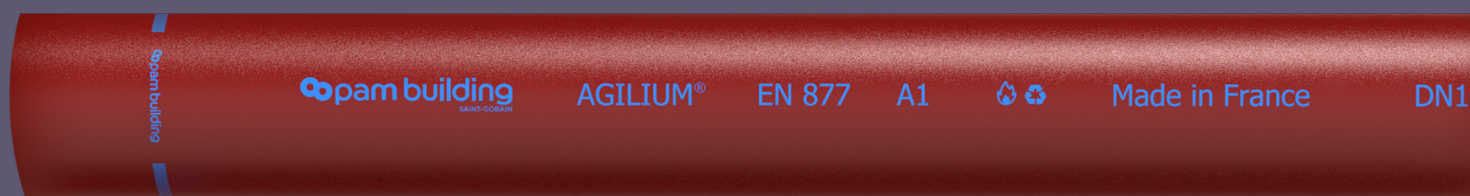
SEE PAGE 14



Total Cost of Installation

We are convinced that the total cost of installation of Ensign Agilium® is lower than many plastic systems. The thinner walled pipes are now much quicker to cut, the system requires no costly accessories such as fire collars or expansion joints and far fewer brackets are required. Why not do the comparison and find out for yourself?

SEE PAGE 15



THE RESULT OF AN ECO-DESIGN

Evolution of the EN877 standard

The EN877 standard has evolved and now allows us to reduce the minimum wall thickness.

DN	Minimum wall thickness (mm)*
100	2,0
125	2,5
150	2,5
200	3,0
250	3,5
300	4,0

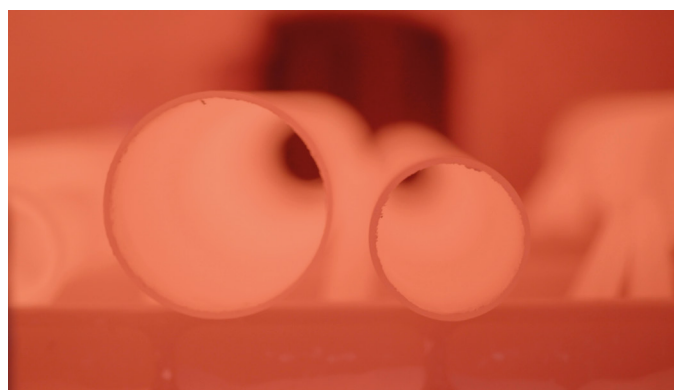
* Minimum value of wall thickness up to -1 mm,

The Lavaud process

A unique manufacturing process, optimized for Agilium®.

In the Lavaud process, historically developed by Saint-Gobain, the liquid metal is poured into a bare steel shell and undergoes very rapid cooling.

A graphitisation annealing process, followed by ferritisation, results in pipes with exceptional mechanical properties.



02

PERFORMANCE

FIRE SAFETY

LONGEVITY

ACOUSTIC COMFORT

ENVIRONMENTAL IMPACT



02

PERFORMANCE

ENSIGN AGILIUM®

Ensign Agilium® complies with the new standard EN877 and maintains equivalent performance to our current cast iron drainage solutions.

We have conducted numerous tests in accredited laboratories and in our R&D centre, which confirm the excellent performance of Ensign Agilium® cast iron.



FIRE SAFETY

Pipes are the arteries of a building.

In the event of a fire, the risk is that these pipes will sustain and spread the fire throughout the building. Choosing PAM Building cast iron systems means ensuring the safety of people and property.

EUROCLASSES		
A1	-	-
A2	s1	d0
A2	s1	d1
A2	s2	
	s3	
B	s1	d0
	s2	d1
	s3	
C	s1	d0
	s2	d1
	s3	
D	s1	d0
	s2	d1
	s3	

Criteria Production of SMOKE

s1 : Low production of smoke
s2 : Medium production of smoke
s3 : High production of smoke

Criteria Molten droplets

d0 : No molten droplets
d1 : Molten droplets that persist for less than 10 s
d2 : Molten droplets

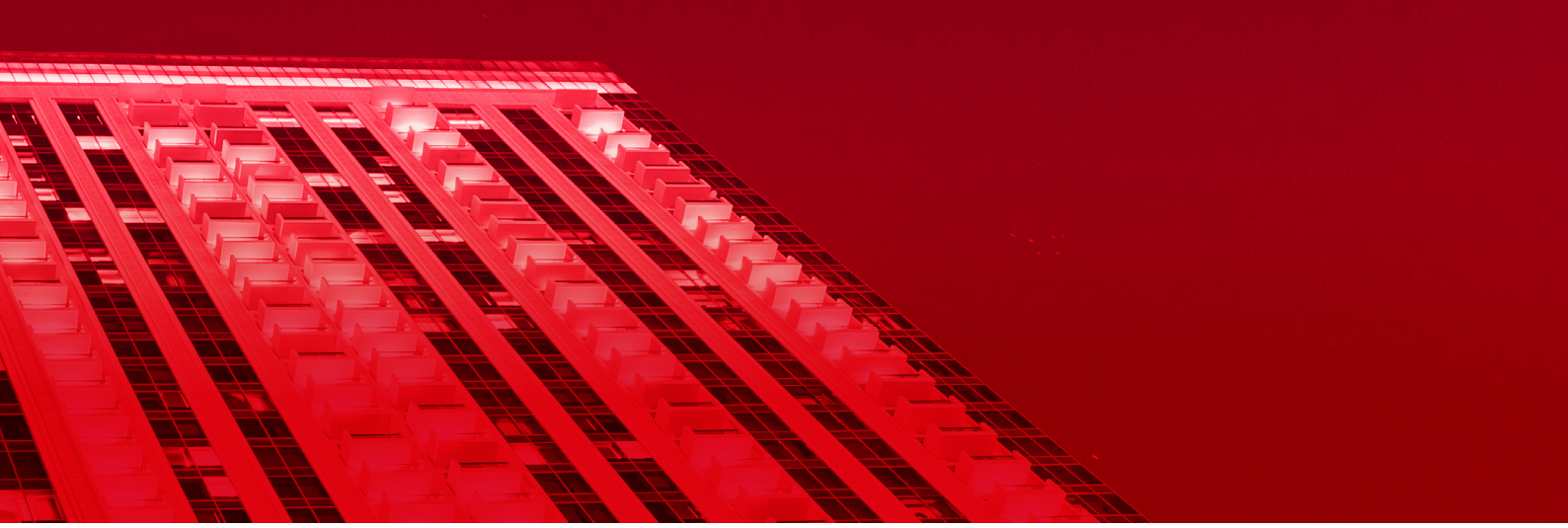
Reaction to fire

- Reaction to fire is the ability to ignite and to feed the fire.
- **Ensign Agilium® is A1 fire rated and completely non-combustible. It will not generate smoke or droplets in case of fire.**

The Euroclasses establish a classification of reaction to fire that is harmonised throughout Europe and can be used to compare materials and product performance.

Fire resistance

- The fire resistance of a product is its ability to resist fire for a given time and not transmit the fire to an adjacent room.
- Ensign Agilium® cast iron is a non-combustible metallic material with a melting point **higher than 1000°C.**



Fire resistance test results

Fire resistance tests have been carried out, by Efectis, on both wall and floor slab penetrations and in most circumstances no additional protection is required to achieve Approved Document B EI ratings. Our technical team will provide project specific advice to achieve any EI ratings throughout the building.



Fire resistance tests carried out by Efectis.





PERFORMANCE AND MECHANICAL STRENGTH

Reduced maintenance costs due to the mechanical properties of cast iron.

Aging behaviour : cast iron is characterised by **a long life span of 70 years**, in particular thanks to the stability of its mechanical properties, in comparison with the aging of polymers and their deterioration.

		Process Agilium®	Other processes (not PAM Building)	Provision of the European standard EN877
	Tensile strength on specimen in MPa (average values)	310	270	200 minimum
	Crushing strength on ring in MPa (average values, DN 100 pipe)	515	360	350 minimum
	Brinell surface hardness in degrees HB (average values)	165	245	260 maximum

Resistance of Ensign Agilium® cast iron to impacts occurring in car parks and basements.



ACOUSTIC COMFORT FOR OCCUPANTS

Our cast iron systems easily meet the industry guidelines. Agilium® produces airborne noise of 46 dB(A) according to EN 14366, for a discharge rate of 2 l/s.

(Test report P-BA6/2021E, tests performed at the Fraunhofer Institute).





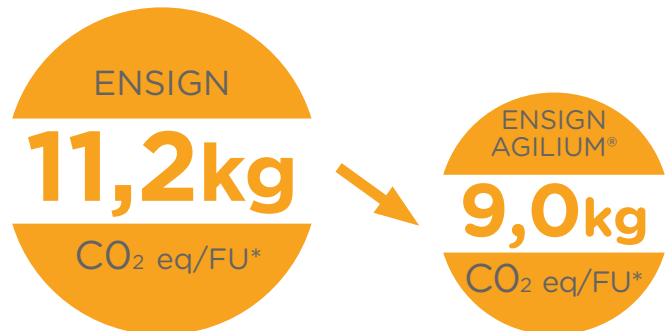
ENVIRONMENTAL IMPACT

Ensign Agilium® is our first eco-design, in line with our new environmental roadmap.



20% lower CO₂ emissions with Ensign Agilium®, compared to our current ranges

This performance is validated by comparing our new Ensign Agilium® Environmental Product Declarations (EPDs) with the one previously available on the Environdec database (www.environdec.com).



*FU = Functional Unit = 1 metre of drainage system

And still unbeatable in terms of circular economy!

99%
RECYCLED

100%
RECYCLABLE



Tower
Saint-Gobain
certified
BREEAM,
LEED,
HQE and
effinergie
using PAM Building
drainage
solutions.
PAM Building.

03

PRODUCT RANGE

OFFER AND COMPATIBILITY

BIM

DIMENSIONS

COATING

PRODUCT MARKING

ENSIGN AGILIUM® RANGE

PRODUCT RANGE

UAGILUM® EN 1771-10

ø pam building

PRODUCT RANGE

A complete new offer with 29 new references (pipes and fittings) to replace the current range.

PIPE

-30% lighter*



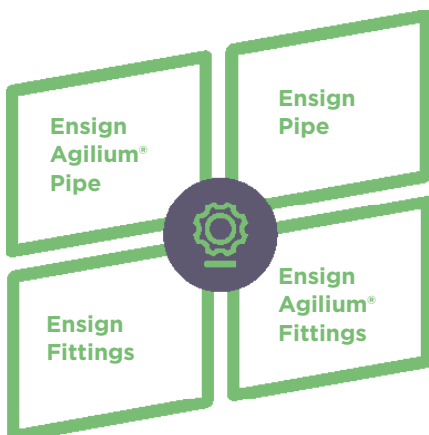
6 references

July 2023: DN100 to DN300

- Average reduction of 30% compared to the Ensign range.
- A 3m Ensign Agilium® DN100 pipe weighs just 17 kg, compared to 24 kg for Ensign.
- The outer diameter is maintained.
- Slight increase in inner diameter.

WIDE RANGE OF PRODUCTS AND COMPATIBILITY

- You can mix Ensign Agilium® pipe with Ensign fittings.
- You can mix Ensign pipe with Ensign Agilium® fittings.
- You can use most standard joints.
- You can keep most of the reservations for Ensign with Ensign Agilium®.



FITTINGS

-15% lighter*



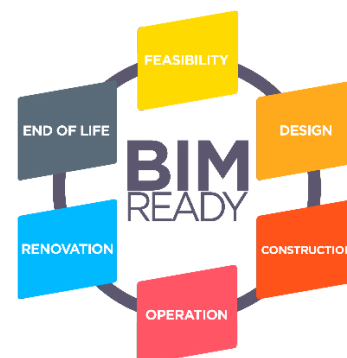
23 references

July 2023: 13 references
September 2023: 8 references
2024: 2 references

* Average weight reduction compared to the Ensign range.

NEW LIBRARY OF BIM OBJECTS

- Revit format.
- Coexistence with the old Ensign library.



SHORTER FITTINGS REQUIRING LESS SPACE IN THE VOID

- Reduced sealing zone (ZE) at the ends.
- External diameter maintained.
- Weight reduction* **15% on average**.



In the example above the footprint is reduced by 2.3 cm.
Contact us for other configurations.

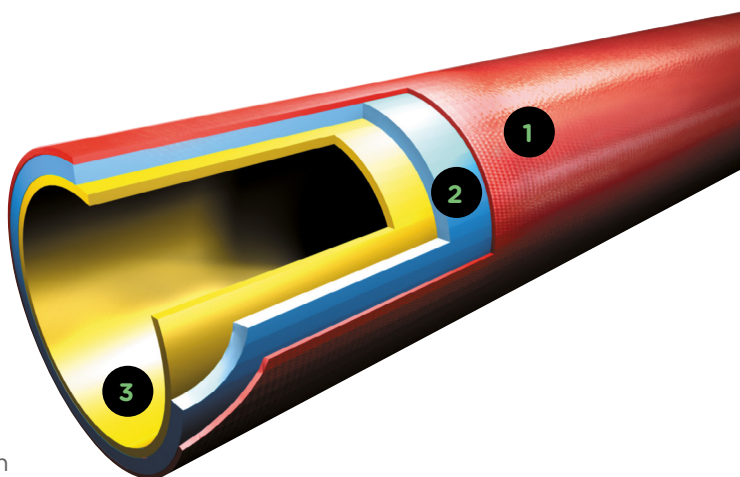
COATING

Pipes

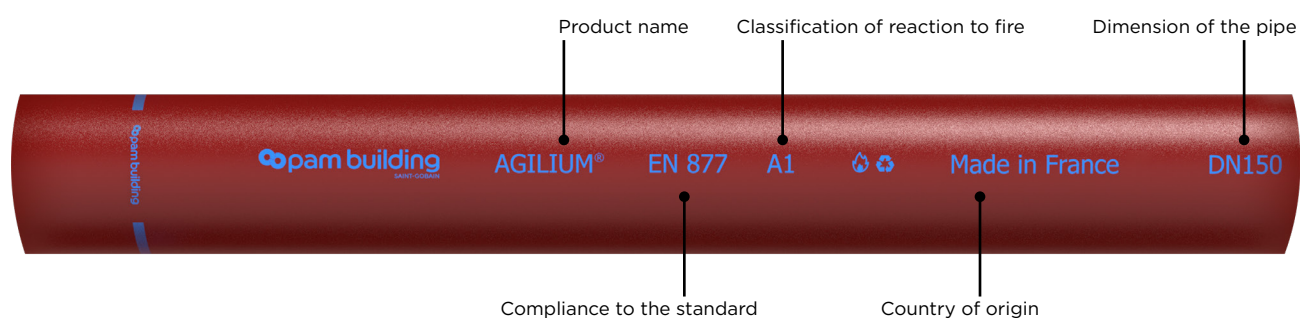
- 1 Exterior coating** red brown acrylic primer with an average dry film thickness of 40 microns.
- 2 Cast iron manufactured according to the Lavaud process.**
- 3 Interior lining :** Two-component epoxy coating, ochre colour, average dry film thickness 130 microns.

Fittings

Exterior and interior coating in red brown epoxy with an average thickness of 70 microns.



PRODUCT MARKING - PIPES



For easy visual differentiation in the warehouse and on the construction site

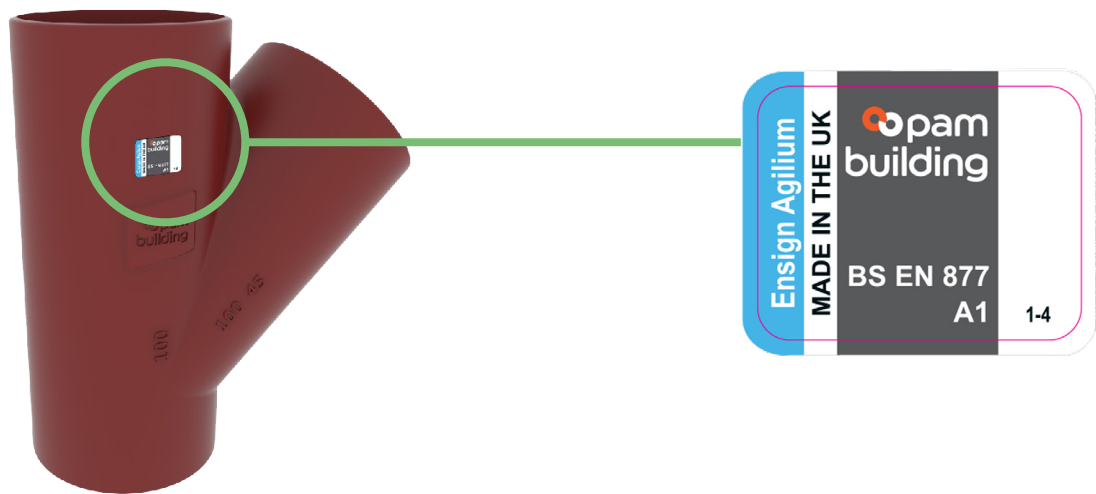
- Blue marking.
- Blue ring at the end of each pipe.



EAN code for simplified inventory management



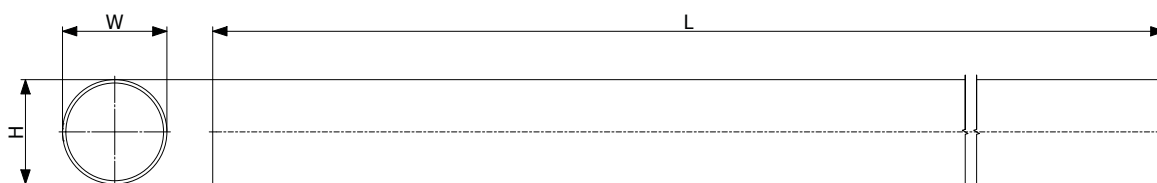
PRODUCT MARKING - FITTINGS



ENSIGN AGILIUM® - PIPE

DN	L	H	W	Weight	Product Code
100	3000	110	110	16,8	283723
125	3000	135	135	24,8	283724
150	3000	160	160	30,5	283725
200	3000	210	210	46,3	283726
250	3000	274	274	66,4	283727
300	3000	326	326	86,7	283728

July 2023



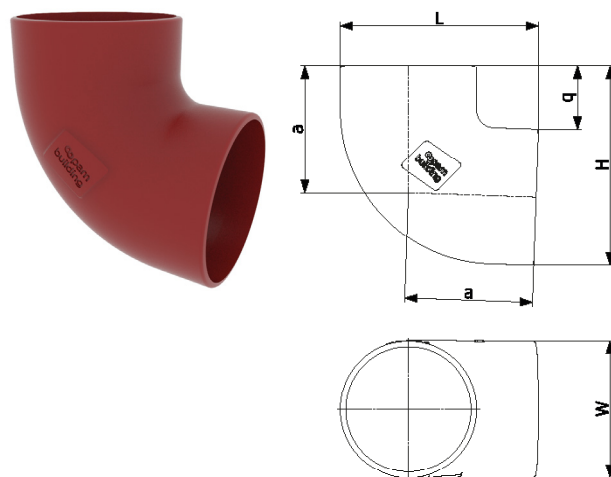
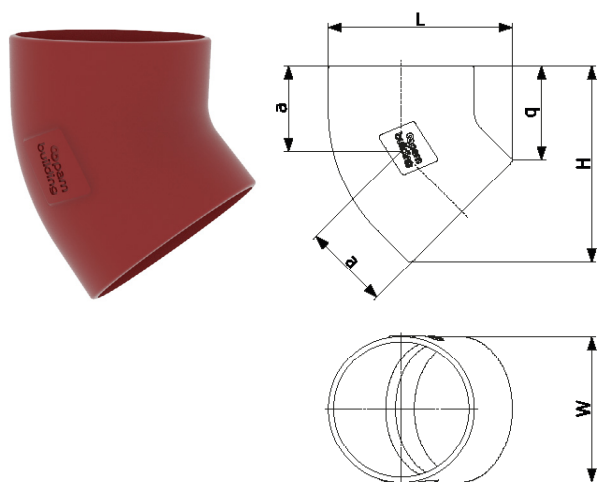
ENSIGN AGILIUM® - FITTINGS

45° and 88° bends

Angle	DN	L	H	W	a	q	Weight	Product Code
45°	100	139	149	110	65	72	1,15	282809
	125	167	175	135	75	80	2,4	283032
	150	195	201	158	85	88	3,01	286809
	200	253	254	210	106	106	5,4	286821
88°	100	160	160	110	103	52	1,79	283022
	125	190	192	135	120	57	2,84	286824
	150	223	224	158	140	65	4,33	286823
	200	284	287	210	176	77	9,6	286822

July 2023

September 2023



ENSIGN AGILIUM® - FITTINGS

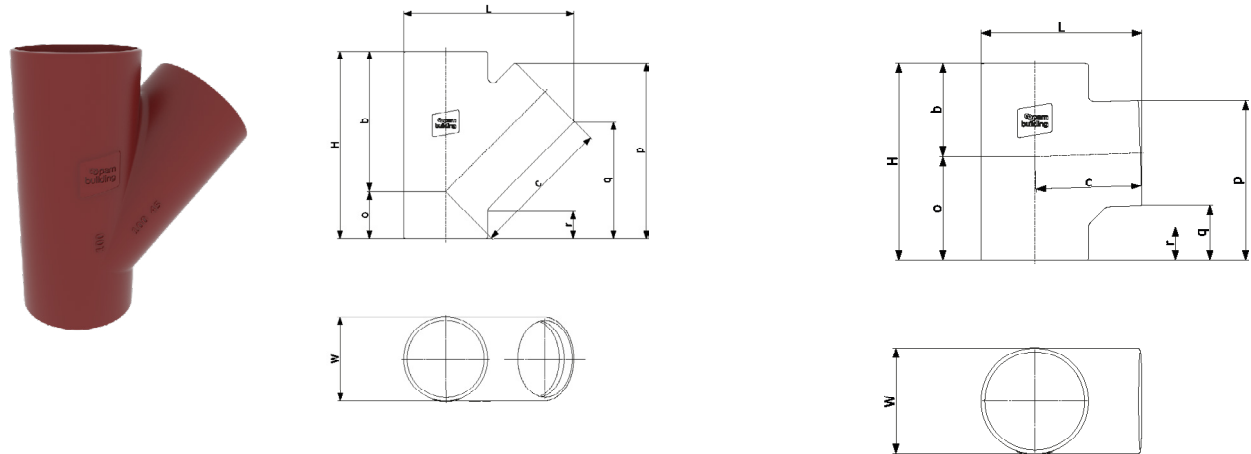
Single branches to 45° and 88°

Angle	DN	dn	L	H	W	a/b	c	o	p	q	r	Weight	Product Code
45°	100	100	223	245	110	185	185	60	229	152	35	3,28	282807
	125	100	248	255	135	202	202	53	234	157	40	4,25	283033
		125	270	291	135	220	220	71	273	178	40	5,3	283034
	150	100	278	277	158	222	227	55	253	176	55	5,72	286814
		125	294	308	158	240	237	68	282	188	50	6,71	286813
		150	320	344	158	261	261	83	323	210	45	8,2	286810
	200	100	327	2 91	210	256	256	35	257	180	59	7,44	286817
		125	346	326	210	275	275	51	292	197	57	8,86	286818
		150	389	362	210	294	294	68	332	219	56	10,45	286819
		200	409	428.5	210	326.5	326.5	102	406	258	55	13,33	286820
88°	100	100	165	206	110	98	108	57	167	108	35	2,46	282810
	125	125	200	243	135	116	127	64	199	127	40	3,98	286811
	150	150	232	280	158	132	148	73	233	148	45	5,32	286812

July 2023

September 2023

2024



Double branches at 45°

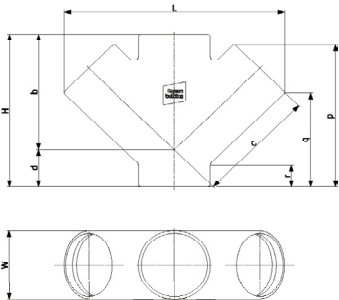
Angle	DN	dn	L	H	W	b	c	d	p	q	r	Weight	Product Code
45°	100	100	337	245	110	185	185	60	229	152	35	4,14	283024
	125	125	421	307	135	232	232	75	285	190	45	7,17	286816
	150	150	487	356	158	266	266	90	333	221	55	9,68	286815

July 2023

2024

DESCRIPTION

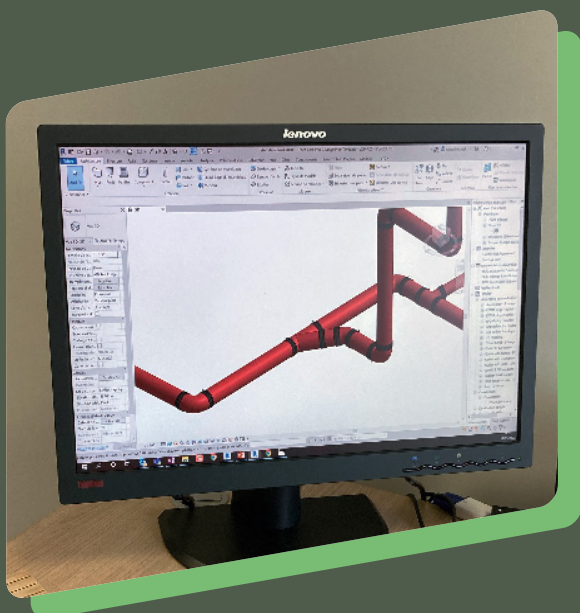
The Ensign soil pipe is manufactured to BS EN 877. Available in 3m lengths the light-weight cast iron pipe is used for all soil, vent and rainwater applications.



OUR SERVICES TO PROFESSIONALS

READ MORE

Contact the PAM Building sales manager in your area.



BIM CATALOGUE

Design your projects with BIM. PAM Building is fully committed to this new way of thinking about construction and to the new working methods induced by BIM. We provide you with our own PAM cast iron library (in REVIT format) for the representation of sanitary and rainwater evacuation networks.

Register now and upload BIM files and objects on the BIM Library:
www.bimlibrary.saint-gobain.com

READ MORE

About the use of BIM for PAM Building products: access our tutorials on our YouTube channel.

TECHNICAL SUPPORT

Our portfolio of services is constantly adapting to the new expectations of designers and M&E contractors working on construction projects. If you have any questions, please contact our experts.

READ MORE

Technical assistance:
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email: technical.pambuilding@saint-gobain.com





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