

Rapid News

Welcome (back) to Rapid News

In 2006, Rapid News kept our customers briefed on the introduction of the Rapid joint. Now, at the end of 2011, Rapid News will focus on the changes to some of Saint-Gobain PAM's products to meet the requirements of BS EN 545:2010.

Rapid News will be targeted to the key contacts in your organisation who need to know the progress of the conversion to the new standard and can disseminate the information to their colleagues.

Rapid News will be published once per month. Delivery will be electronically with a link to a downloadable .pdf on our website.

Receiving Rapid News

You have been identified as a key contact within your organisation by your local Saint-Gobain PAM Regional Sales Manager, whose name will appear in the contacts section at the end of this newsletter.

If you wish to continue to receive notification of future issues of Rapid News, **you need do nothing** – you will receive e-mails with the new link as soon as future issues of Rapid News are published.

However, if you do not want to receive any further notifications, you can let us know at any time by sending an e-mail to david.smoker@saint-gobain.com and your name will be removed from the mailing list.

We encourage communication of the contents of Rapid News amongst your colleagues. Please feel free to forward Rapid News to others within your organisation. Alternatively, if you feel that a colleague would benefit from receiving their own notification directly from Saint-Gobain PAM UK, please let us know their name, position and e-mail address. It's as simple as that!

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Rapid News will be targeted to the key contacts in your organisation.

BS EN 545: 2010

First published in 1995, BS EN 545 is well established as the product specification for ductile iron potable water pipeline systems within the water industry. European standards are reviewed regularly to ensure that they remain in touch with technical improvements and this standard has recently been revised and published (31st October 2010) following a 3 year work programme.

Pressure classes are a more logical way of expressing a pipe's pressure capability – can anyone spontaneously give the working pressure of a DN 600 K9 pipe?

The new standard includes the most radical change since the first publication with the replacement of thickness (K) classes by the more logical and practical pressure (C) classification. Although there were some other amendments to the standard they were more to reflect the reality of current supply from most manufacturers, e.g. the minimum coating thickness was increased to 200 mg/m².

Pressure Classes

Previously, pipes and fittings were classified in K classes (e.g. K9), calculated from an empirical formula based mainly on manufacturing constraints at the time of the first publication in 1995. This resulted in pipes with pressure capabilities far in excess of their intended usage especially at smaller diameters. For example, a DN 150 flexibly jointed pipe of K9 minimum thickness was rated at 79 bar working pressure which, with a safety factor of 3, means an actual failure pressure in the region of 235 bar – far in excess of normal network operating pressures! Even in the larger diameters, say DN 1200, the actual failure pressure was in excess of 110 bar.

With the advent of improved manufacturing techniques and substantial investment in computer controlled technology, it is now possible to produce homogeneous ductile iron pipe consistently to more realistic thicknesses appropriate to their use.

The new standard EN 545:2010 adopts the language of users and classifies pipes and fittings by pressure classes, i.e. according to their pressure capability. The old K classes will disappear as they will no longer conform either to EN 545:2010 or the ISO 2531:2009 standard, as used outside Europe.

$$PFA = \frac{20 \cdot e_{\min} \cdot R_m}{D \cdot S_F}$$

PFA = working pressure in bars

e_{\min} is the minimum pipe wall thickness, in mm

R_m is the minimum tensile strength of ductile iron (= 420 MPa)

D is the mean pipe diameter, in mm

S_F is a safety factor of 3

The maximum PFA of a pipe is equal to its class number, e.g. PFA 40 bar for a class 40 pipe

Roll-out Programme for the new Standard

Saint-Gobain PAM UK began preparations for the transition to the new standard in 2010, to make sure that the transition from a customer's point of view will be as seamless as possible.

As from now, we will start to deliver pipes marked to the new standard (see below) as stocks with the previous markings are run down.

Some codes will change and we will keep you informed of these through Rapid News, your local contact (see back page) and updates to your electronic schedules.

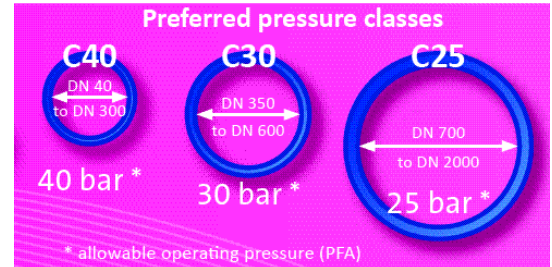
You can still order on the existing codes and we will carry out the substitution through our SAP system.

'Preferred' Pressure Classes

EN 545: 2010 defines default pressure classes by diameter. These are referred to in the standard as 'preferred pressure classes:

- DN 40 to 300 – Class 40 = 40 bar PFA (working pressure)
- DN 350 to 600 – Class 30 = 30 bar PFA
- DN 700 to 2000 – Class 25 = 25 bar PFA

These pressures still retain a safety factor of 3 (the highest of any pipe material). Other pressure classes are available, with provision to tailor-make a pressure class to suit a specific project or application, e.g. PAM Universal anchored pipes.



Pipe Markings

Pipes conforming to the new standard will be marked with both ISO 2531 and EN 545 (the two standards are now well aligned to allow conformity to both) and the pressure class. This is a change to the previous marking where either EN 545 or ISO 2531 would be marked and the rating was not marked, unless it was **not** Class 40 (uti 400mm) or K9 (>450mm). This change in marking protocol will help you identify pipes conforming to the new standard



Are Pressures Classes Applied to Fittings?

EN 545: 2010 does classify socketed fittings in pressure classes but the classes were selected to match the existing performance under the old K class regime. Therefore, no changes to our current offer are required in order to comply with the new standard.

Note that the standard recognises that fittings with branches may have a lower pressure rating than the 'preferred' pressure class and this should be specified by the manufacturer.

Note also that the working pressure of flanged fittings is determined by the pressure rating of the flange.

Fittings are not marked with their pressure class

The Impact on Self –Restrained Joints

The use of anchor gaskets (or any self-restrained joint) can reduce the PFA of a pipeline and Saint-Gobain PAM specifies the working pressure of all its self-restrained joints.

To ensure continued performance, we have modified the anchor gaskets for DN 150, 200 and 250 from the first quarter of 2011, but all other self-restrained joints remain the same.



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We welcome any feedback you may have about Rapid News. Please contact David Smoker either by e-mail (david.smoker@saint-gobain.com) or at our head office address shown at left

Next Issue

In the next issue of Rapid News:

- Sustainability benefits
- The other changes in EN 545
- Joints
- Corrosion Protection
- Frequently Asked Questions

For further information about any of our products and solutions serving the utility industries, please visit our website: www.saint-gobain-pam.co.uk