

# Information File Note

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TOPIC: EN124 ~ Product Standard

DATE: March 2009

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## Comment

- 1) All PAM Access Covers & Gratings are manufactured to conform to the product standard EN124:1994. This ensures suitability for application and consistency of manufactured product.
- 2) EN124 is the European Product standard for Municipal Castings:  
Title ~ "Gully tops and manhole tops for vehicular and pedestrian areas – design requirements, type testing, marking, quality control.
- 3) The standard is widely used outside of Europe and is mandatory with all of the European countries. It is generally regarded as the most difficult performance standard to be met. The standard allows for the design of covers to be safely used in areas of exceptional traffic speed and excessive weight vehicles.
- 4) The standard not only defines the product performance requirements but also defines the test protocol.
- 5) There is nothing comparable within the North American market. There is no mandatory third party assessment of products within North America. In effect specifiers and end users are reliant on the 'integrity' of the supplier from whom they are purchasing.
- 6) The standard requires a number of key product elements to be met which include:
  - **Load testing.** Generally for road use (D400) this requires 400kN load test which equates to 88,000lbs i.e. a minimum of 3 times the requirement of H20.
  - **Permanent set.** Defined as a %age of clear opening. It ensures that there is no brittle failure (catastrophic) likely to occur.
  - **Clearance.** The standard requires that edge gaps for a road casting cannot exceed in total a maximum 9mm. This ensures that manufacturing patterns are maintained to maintain the level of dimensional accuracy required within the end product. No individual gap is allowed to exceed 5mm.
  - **Seatings.** Design of the casting requires that the product is 'Silent and Stable in use'. This may be achieved by machining, use of cushioned inserts or three point suspension.
  - **Depth of insertion.** The depth of the cover in the frame must exceed 50mm. This ensures that the cover cannot become loose from the frame during trafficking.
  - **Third party certification.** All products have to undergo third party assessment by a recognised certification body. There is no exception to this rule. The certification body must comply with further standards contained within EN45000 series to be eligible. Testing of the plant includes twice a year audits and random testing of all products.

- **ISO 9000.** All manufacturing bodies must comply with the international design and manufacturing standard to be eligible to manufacture products under EN124 (with some exception which require monthly audits).
  - **Marking.** Products cannot be marked with the 3<sup>rd</sup> party stamp (e.g. NF mark) without the certification body approval. No product can be offered for sale or used without the certification body stamp. There are no exceptions regardless of application.
  - **Manufacturing location.** Every product will be marked with the manufacturing location (foundry) in order to avoid sale of product from unknown foundries to the end client. All products can be audited.
- 7) Metal control is also an important element of the auditing contained within EN124. Precise control is a requirement and products are designed within a defined parameter of metal performance characteristics. Typically DI products are manufactured at 500/7 i.e. 500kN tensile strength and 7% elongation. Class 35b metal has a tensile strength of 35,000psi with little or no elongation (i.e. it is brittle). 500kN is equivalent to 68,000psi and due to its metal characteristics is impact resistant.
- 8) Product designs cannot be altered and offered for sale without agreement and approval from the certification body. This eliminates random changes made by the manufacturer which may be unsafe in the field.