

Fire Damper

Case Study EDF Energy Torness Power Station

Wozair Ref: W8107



Scope of Work

One off heavy duty and high integrity Fire Damper supplied as a replacement for a competitor unit that had badly deteriorated since it was originally installed back in the 1980's. Wozair site survey carried out to assess the existing unit and all requirements established and agreed prior to work commencing.

Damper Certification, Construction and Control Features

- DNV-GL third party type approved.
- Independently fire tested to prove integrity for a period of 4 hours.
- Suitable for mounting on A60 rated fire divisions when suitably insulated (1x60 thick 80kg/m³ Firemaster marine blanket, thermal ceramic as A60 Insulation between damper frame and controls enclosure).
- 3.0 mm thick Stainless Steel 304L continuously welded frame/casework.
- Casing acid pickled and passivated after manufacture.
- 20 mm dia. lifting and support holes provided in top of frame.
- Damper size (l/S): 1600W X 1600H X 300D (mm) + 305 (mm) Duct Pool Extension Piece.
- 80 mm wide front and rear flanges drilled to client requirement and to match existing connection/ductwork at site.
- 2 x 1.5mm double skin isolating aerofoil profile blades with opposed motion.
- Blades are plug welded to continuous 19.0 circular solid shafts. Welds mechanically cleaned and dressed.
- Angle blade stops (25 x 25 x 3 mm) in stainless steel 304 and sealed with PFC Corofil Firestop.
- Non drive end bushes retained in stainless steel fully welded blind bosses.
- Drive end bushes retained in fully welded through bosses, sealed with a nitrile lip seal.
- Controls philosophy is such that damper shall fail closed;
- Controls components housed with a stainless steel enclosure except for the electrical junction box which sits on top of the enclosure. Enclosure 3 sided with access cover retained with quick release toggle latches.
 - Manual reset and latching to the open position via turning a nut
 - The damper is opened by turning the reset nut clockwise with a 17 A/F spanner until the operating mechanism is engaged..
 - Frangible bulb assembly integrated to damper and housing x 2 off quick response rbulbs designed to break and activate closure of damper/ blades via a latching mechanism when temperature inside duct exceeds 68 degrees c. Note that bulbs are replaceable.
 - Limit switches; x 2 off provided fully wired to a junction box mounted on the damper to provide remote position indication of damper/blades.

Damper Testing

- Dimensional check & Damper opening and closing operation.
- Check operation of switches & electric continuity
- 100% visual weld inspection to BS EN ISO 17637:2016 code of practice & 100% dye penetrant inspection to containment welds.
- Leak tested to demonstrate a maximum leakage of 1.5% of enclosed volume per hour at 3000 Pa.

Supporting Documentation Offered

- Lifetime Quality Record including;
 - Inspection & test plan
 - Drawing Register
 - Specification Register
 - Stainless Steel Weld Procedures
 - Welder Qualifications
 - Control Procedures
 - Concessions/Product Permits
 - Calibration Certificates
 - GA Drawings
 - Works Inspection Test Record
 - Leakage Test Certificates
 - Material Traceability Records
 - Non-Destructive Test Certificates
 - Material Certification
 - Certificate of Conformity
 - Release Certificates
 - Operation and Maintenance Instructions
 - Operating Spares List

Replacement Damper Type Photos



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