

# ENVIROGRAF® PRODUCT GROUP 13

## INTUMESCENT COLLAR



### DESCRIPTION

Circular intumescent collars with versatile fixings enabling the units to be fitted onto ceilings, floors, or walls; or they can be rebated into ceilings or walls (hollow/plasterboard). Up to 4 hours protection for pipes 45 - 650mm internal diameter. An acoustic version is available.

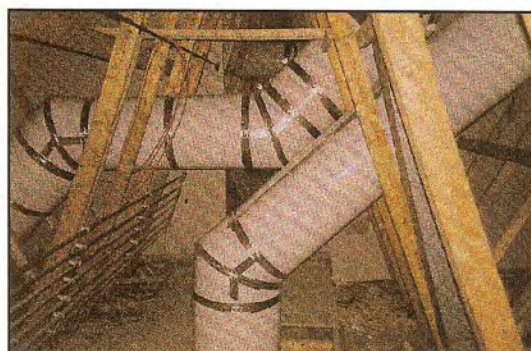
### PERFORMANCE

The WPCS unit has been tested to BS476 Parts 20 & 22 (1987), giving up to 4 hours of fire protection. Also tested at VNE to European Standard EN1363-1 (2000).

## SLEEV-IT FIRE CHOKE COLLARS

### Description

Sleev-it Fire Choke Collars consist of a two part steel sleeve, with Intumex intumescent graphite inserts contained within a Maritex Silver PU coated fabric shroud.



### Why use Sleev-it Fire Choke Collars?

- Fully tested to BS476 Part 20 (Test Report No TE 93302)
- 2 Hour Integrity
- Ideal for use with tubular skylight installations
- Available up to 530mm dia. uPVC/aluminium pipe



### Applications

- Suitable for use where tubular skylight installations pass through or penetrate fire rated walls/floors.
- Also suitable for timber floors



### Installation

- Fit Sleeve-it Fire Choke collar around aluminium or uPVC plastic pipe and secure with steel non flammable anchors.



# L o s s P r e v e n t i o n C o u n c i l

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Our ref: CC 93931/RHE/LOC

Date: 15 November 1999

## Attention Mr. W. Hoffman

### 1. Introduction

The Sleev-It fire choke collar FC530 for aluminium pipes has been subjected to a fire resistance test for two hours when mounted in an aerated concrete floor slab. This report describes the assessment which has been carried out on the collar assembly when mounted in a timber floor.

### 2. Scope

This assessment report covers the fire resistance of the Sleev-It fire choke collar FC530 for aluminium pipes mounted in a timber floor assembly in terms of the adopted integrity criterion of BS 476: Part 20: 1987 for fire exposures of up to one hour from below.

### 3. Supporting data

A pipe penetration seal assembly mounted in a 150mm-thick aerated concrete floor slab was submitted to an ad-hoc fire resistance test, for a duration of 126min, on 13 August 1999. The test was executed employing the furnace heating conditions and appropriate procedures and criteria of BS 476: Part 20: 1987. The fire choke pipe seal system, ref. FC530, was fitted to a 530mm diameter x 0.55mm wall thickness aluminium pipe and secured to the soffit of the floor slab on the exposed face. The fire choke seal system comprised Intumex intumescent strips enveloped in a silica cloth retained within each half of a split mild steel container contoured to fit tightly around the pipe. For the test the aluminium pipe was plugged with mineral fibre at the lower and upper ends (inside and outside the furnace).

The penetration seal system satisfied the adopted integrity and insulation criteria for 126min and 4min respectively. See LPC test report TE 93302 for full details.

### 4. Description of seal system

The timber floor assembly, in which the collar is mounted, must be constructed in accordance with BS 5268: Part 2. The opening in the floor is constructed with timber noggings, the same size as the floor joists, on all four sides. The reveal of the opening is lined with a non-combustible board (e.g. Vicuclad or Supalux) at least 12mm thick. The ceiling of the floor assembly consists of plasterboard. The floor assembly must have a fire resistance of at least one hour in accordance with BS 476: Part 21: 1987.



The details of the aluminium pipe (530mm o.d. x 0.55mm thick wall) and the Sleeve-It FC530 fire choke collar are the same as in fire test TE 93302. The collar is fitted to the soffit of the floor assembly. Each half of the collar is fastened to the floor joists using minimum M5 steel screws. The screws must penetrate the joists by at least 30mm. Rock wool, nominally 50mm thick x 60kg/m<sup>3</sup> density, is wrapped around the aluminium pipe from the top of the fire collar to at least 100mm above the top of the joists and held in position with steel wire ties or steel bands. A collar, made of the same non-combustible board as used on the reveal of the opening, is fitted around the aluminium pipe on the top of the floor assembly.

## 5. Assessment

The construction of the Sleeve-It FC530 fire choke collar and the aluminium pipe are the same as those tested in TE 93302, system A. The fire choke collar comprised a rectangular mild steel box 580mm wide x 735mm long (on jointed face) x 150mm high x 1.1mm thick walls with a 530mm diameter hole positioned centrally on the top and bottom 735mm x 580mm faces, to facilitate clamping the steel (split box) around a 530mm diameter aluminium pipe. Each half of the choke collar contained 32 layers of Intumex graphite based intumescent strips, 60mm x 500mm x 2.5mm thick, enveloped in a fibre glass cloth secured to the top and bottom faces of the choke collar with thirteen nuts, bolts and washers per face. Each half of the choke collar was bolted to the soffit of the floor slab at eight sites equally spaced around the perimeter, and bolted to the other half at mid length of each 735mm-long face with three nuts, bolts and washers, on returns normal to the collar surface.

The non-combustible board is fitted to the reveal of the opening in the timber floor to protect the sides of the joists from the fire. The plasterboard ceiling should be fitted up to the edge of the collar box. Any small gaps between the collar box and the floor structure must be filled with a fire-rated mastic. The rock wool wrapped around the aluminium pipe above the collar is to ensure that the heat transfer through the pipe does not adversely influence any of the floor components. The collar of non-combustible board on top of the floor is fitted to close off the top of the opening through the floor and is in place of the floor boards.

## 6. Conclusions

Therefore it is our opinion that the Sleeve-It FC530 fire choke collar is suitable for installations where an aluminium pipe passes through a timber floor, as described in section 4 of this report, for a fire resistance of up to one hour in terms of the adopted integrity criterion of BS 476: Part 20: 1987, given the requirements of this report.

## 7. Validity

This assessment is based on test data, experience and the information supplied. The assessment is valid for a period of two years after which it should be returned for review to consider any additional data which has become available or any changes in the fire test procedures. Any changes in the specification of the product will invalidate this assessment.

This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 64. It relates to the fire performance of the product and does not cover aspects of quality, durability, maintenance nor service requirements. This assessment relates only to the specimen(s) assessed and does not by itself infer that the product is approved under any Loss Prevention Certification Board approval or certification scheme or any other endorsements, approval or certification scheme.



Review date: 15 November 2001.

Assessment by:

A handwritten signature in blue ink that reads 'Richard Earle'.

R.H. Earle  
Section Manager  
Building Product Assessments  
**LPC LABORATORIES**

Reviewed by:

A handwritten signature in blue ink that reads 'R.A. Kelly'.

R.A. Kelly  
Consultant  
Building Product Assessments  
**LPC LABORATORIES**

# Fire Protection Pipe Collars

## Test Confirmation TE93302

This document confirms that the pipe seal system fitted to SunPipes vertically originated and passing through a 150mm-thick aerated concrete floor slab was submitted to an ad-hoc fire resistance test for a duration of 128 min, on 13 August 1999. The test was executed employing the furnace heating conditions and appropriate procedures and criteria of BS 476 : Part 20 : 1987.

The system tested was identified as follows :

530mm O.D. aluminium pipe x 0.55mm thick wall. A fire choke pipe seal system, ref. PC530, fitted to a 530mm diameter aluminium pipe and secured to the soffit of the floor slab on the exposed face. The fire choke seal system comprised Intumex intumescent strips enveloped in a slice cloth retained within each half of a split mild steel container contoured to fit tightly around the pipe.

This system achieved the following :

Insulation : 4 min

Integrity : 126 min

## Letter of conformation from the Loss Prevention Council - 28th September 1999, R H Earle

We agree that for the situation where the aluminium pipe passes through a timber joist and plasterboard ceiling the sides of the joists adjacent to the pipe must be protected with a non-combustible board such as Vicuclad or Supalux. The pipe should also be wrapped in Rockwool from the top of the plasterboard ceiling to at least 100mm above the top of the joists. The fire collar should be fitted to the soffit of the ceiling, as tested. If it is fitted above the joists the exposure conditions will be very different to the specimen tested. Presumably timber noggins (protected with Vicuclad) will be fitted between the joists to provide adequate fixing for the fire collar. The steel screws into the joists and noggins must penetrate the joists by at least 30mm. If the collar is installed in this manner, it is our opinion that the penetration seal would be suitable for a one hour fire rating in terms of the integrity criterion BS476:Part 20:1987. This assumes that the ceiling has a minimum one hour fire rating.

## Fire Collar Installation

