

# Lesson Learned No-17

## AUTO IGNITION OF FOAM TRENCH BREAKERS

### Events Description:

On 2 separate occasions foam trench breakers installed on the ROW (to prevent erosion and wash-out of the soil within the trench) have auto-ignited a number of hours after the foam had been dispensed.

### Possible Consequences:

Damage of the pipe coating

### Immediate Actions:

On both cases the fires were immediately extinguished by a Security guard (first case) and by a surveyor (second case). Supplier of the material was contacted for request of information and clarification of correct methodology of installation.

### Possible Reasons:

The foam curing process involves an exothermic reaction. Due to the self-insulating properties of the foam, prolonged and continuous application on large sections can lead to extended curing times and increased core temperatures. This is typically mitigated by slow application of the sprayed foam allowing sufficient time between layers for the foam to cream and expand.

Between other particular reasons associated with the size of the trench, the reason is the combination of the following:

1. Cold temperature (0 to 1 degree Celsius) is a contributing factor, as the foam expansion is less than in normal conditions and the applicators have the tendency to use more material.
2. Spraying of the foam too fast, not following manufactures instructions on waiting times between applications.

### Photos



### Lesson Learned Conclusion:

- Lower ambient temperatures (1° to 4°C) on the days of application increased the curing times.
- Large volumes of foam were applied without allowing the foam to cream and commence curing.
- Revised relevant Work Instruction with corrected methodology
- Ensure all individuals who spray/apply the foam are suitably trained (or refreshed) in relation to the correct application methodology