FIRE & GAS MAPPING

**Trusted expert knowledge** - delivering reduced costs, improved safety and project certainty.
There has long been a requirement in hazardous industries to provide safety measures for the protection of plant and personnel. One means of detecting containment loss relates to the use of a fire and gas detection equipment.

Often referred to as pioneers in the field of ‘Fire and Gas Mapping,’ Micropack have been at the forefront of the industry from the late 1990’s. Micropack developed a suite of mapping tools, and through years of field experience implementing and generating the methodologies which are widely found across the industry today and detailed in ‘ISA TR84.00.07: Guidance on the Evaluation of Fire, Combustible Gas, and Toxic Gas System Effectiveness.’

Fire and gas mapping clearly defines the risk and the precautions needed to be able to detect fires and gas releases.

Working closely with clients needs, the methods we use combined, with real world field experience, allows our consultants to optimize the design and achieve the best possible balance between safety and economy.

This practice, through performance/ risk based design, improves safety and reduces operating costs by ensuring that the number of devices used is minimized while the required level of safety is maintained.

Micropack Engineers are respected globally as having trusted expert knowledge in F&G design.

Our team of consultants can advise in matters such as:
• Designing optimised fire and gas detector layouts
• Performance target definition
• Recommend appropriate alarm, control actions and voting
• Propose process area risk grading
• Recommend detector selection (technology / type)
  • Flammable gas
  • Toxic gas
  • Flame detection
  • Acoustic detection
  • Aspirated smoke detection
  • Gas imaging
• Conduct site surveys
• Review third party designs
• Training, 3rd party accredited course
• Support for other design consultancies
• Use of HazMap3D F&G mapping software
• Testing of 3rd party detectors
## FIRE & GAS MAPPING

### Five Step Process

<table>
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<tr>
<th>Step</th>
<th>Activity</th>
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<tr>
<td>1</td>
<td>Define Project Rules</td>
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|      | • F&G Philosophy / Standard to be used  
|      | • Define Performance Targets  
|      | • Gather site / process specific information |
| 2    | Hazard Assessment |
|      | • Identify areas of concern  
|      | • Identify hazard / risk scenarios  
|      | • Determine consequences  
|      | • Determine hazard frequency  
|      | • Determine unmitigated hazard / risk |
| 3    | First Pass Design |
|      | • Grade Process Equipment Based on Risk  
|      | • Add Detectors |
| 4    | Performance Verification |
|      | • Verify Detector Coverage  
|      | • Relocate / Add Devices until design meets Performance Targets  
|      | • Engineering review of adequacy based on risk analysis |
| 5    | Produce Report |
|      | • Publish report with recommendations |
Formed in 1996, the Scottish company Micropack (Engineering) Ltd is one of the world’s leading flame detection manufacturers and suppliers of fire and gas mapping services, which includes providing F&G software, training, engineering and consultancy.

To find out how we could support your business with your fire and gas detection needs, please get in touch.