

# ISO/TR 12470-2:2017-11 (E)

## Fire-resistance tests - Guidance on the application and extension of results from tests conducted on fire containment assemblies and products - Part 2: Non-loadbearing elements

---

| <b>Contents</b>    |   | <b>Page</b> |
|--------------------|---|-------------|
| Foreword .....     |   | v           |
| Introduction ..... |   | vi          |
| 1                  | Scope .....   | 1           |
| 2                  | Normative references .....  | 2           |
| 3                  | Terms and definitions .....   | 2           |
| 4                  | Principles of the field of application .....                                  | 4           |
| 4.1                | General .....   | 4           |
| 4.2                | Direct application .....  | 4           |
| 4.3                | Extended application .....  | 5           |
| 4.3.1              | General .....   | 5           |
| 4.3.2              | Rules of extended application .....   | 5           |
| 4.3.3              | Calculations and computer programs used in extended applications .....        | 5           |
| 4.3.4              | Judgements in extended applications .....                                     | 5           |
| 4.4                | Project specific application .....  | 6           |
| 5                  | Common factors which influence the field of application of all elements ..... | 6           |
| 5.1                | General .....   | 6           |
| 5.2                | Manufacture and materials .....   | 6           |
| 5.2.1              | General .....   | 6           |
| 5.2.2              | Direct application .....  | 6           |
| 6                  | Fire resisting door assemblies .....  | 7           |
| 6.1                | General .....   | 7           |
| 6.2                | Direct application .....  | 7           |
| 6.2.1              | General .....   | 7           |
| 6.2.2              | Leaves .....  | 7           |
| 6.2.3              | Openings in the leaf .....  | 8           |
| 6.2.4              | Frames .....  | 8           |
| 6.2.5              | Door hardware (ironmongery) .....   | 8           |
| 6.2.6              | Fire seals .....  | 8           |
| 6.3                | Extended application .....  | 9           |
| 6.3.1              | General .....   | 9           |
| 6.3.2              | Rules .....   | 9           |
| 6.3.3              | Fire engineering calculations .....   | 10          |
| 6.3.4              | Expert judgements .....   | 10          |
| 6.3.5              | Opening in the leaf or leaves .....   | 22          |
| 7                  | Fixed vertical fire resisting glazed elements .....                           | 28          |
| 7.1                | General .....   | 28          |
| 7.2                | Direct application .....  | 28          |
| 7.2.1              | General .....   | 28          |
| 7.2.2              | Common parameters of all forms of fixed glazed elements .....                 | 28          |
| 7.2.3              | Framing members (timber) .....  | 28          |
| 7.2.4              | Framing members (metal) .....   | 29          |

|                       |  |    |
|-----------------------|--|----|
| 7.2.5                 | Glass retention system .....   | 29 |
| 7.2.6                 | Glass .....  | 29 |
| 7.3                   | Extended application .....   | 30 |
| 7.3.1                 | General .....  | 30 |
| 7.3.2                 | Rules .....  | 30 |
| 7.3.3                 | Fire engineering calculations .....  | 30 |
| 7.3.4                 | Expert judgements .....  | 30 |
| 8                     | Linear gap sealing systems .....   | 33 |
| 8.1                   | General .....  | 33 |
| 8.2                   | Direct application .....   | 34 |
| 8.2.1                 | General .....  | 34 |
| 8.2.2                 | Common parameters for all applications .....   | 34 |
| 8.3                   | Extended applications .....  | 35 |
| 8.3.1                 | General .....  | 35 |
| 8.3.2                 | Rules .....  | 35 |
| 8.3.3                 | Fire engineering calculations .....  | 35 |
| 8.3.4                 | Expert judgement .....   | 36 |
| 9                     | Service penetration sealing systems .....  | 47 |
| 9.1                   | General .....  | 47 |
| 9.2                   | Direct application .....   | 48 |
| 9.2.1                 | General .....  | 48 |
| 9.2.2                 | Common parameters .....  | 48 |
| 9.3                   | Extended applications .....  | 49 |
| 9.3.1                 | General .....  | 49 |
| 9.3.2                 | Rules .....  | 49 |
| 9.3.3                 | Fire engineering calculations .....  | 50 |
| 9.3.4                 | Expert judgement .....   | 50 |
| 10                    | Improvements in the design of test specimens and modelling to generate fields of application ..... | 56 |
| 10.1                  | General .....  | 56 |
| 10.2                  | Expert system based upon the use of performance coefficients .....                                 | 57 |
| 10.2.1                | Concept .....  | 57 |
| 10.2.2                | Expert system applied to doors .....   | 57 |
| Annex A (informative) | Principles of using expert judgement to establishing the extended field of application .....       | 62 |
| Bibliography          | .....  | 69 |