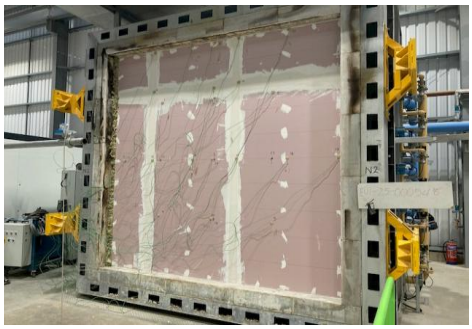
BS EN 1364-1 & THE ROLE OF THE GPA DRYWALL SYSTEM SUPPLIER

Overview

As discussed within GPA Technical Advisory Note 12, BS 476–22 is to be superseded by BS EN 1364–1. Up until 2nd September 2029 both documents are addressed within Building Regulations within The United Kingdom & The Republic of Ireland. The GPA members published data for both testing criteria until withdrawal of part 22. However, the focus and investment for some time has been firmly on drywall systems compliance to BS EN 1364–1. *See links: (British Gypsum Gyproc Knauf Siniat)*

BS EN 1364–1 specifies the method for determining the fire resistance of non-loadbearing walls and is read in conjunction with BS EN 1363–1. It is applicable to internal non-loadbearing walls (partitions), with and without glazing, non-loadbearing walls consisting almost wholly of glazing (glazed non-loadbearing walls) and other internal and external non-loadbearing walls with and without glazing



(Un-exposed partition)

1.

Scope of the Standard & GPA Members

This document is to aid the supply chain from the designer through to the installer to develop an understanding of the standard along with the role of the GPA members and the test criteria.

Non-loadbearing drywall partition systems are covered in clauses(1):
3.1 Non-loadbearing wall partition, designed not to be subjected to any load other than self-weight.

3.2 Internal non-loadbearing wall internal partition, which is not part of the envelope of a building construction

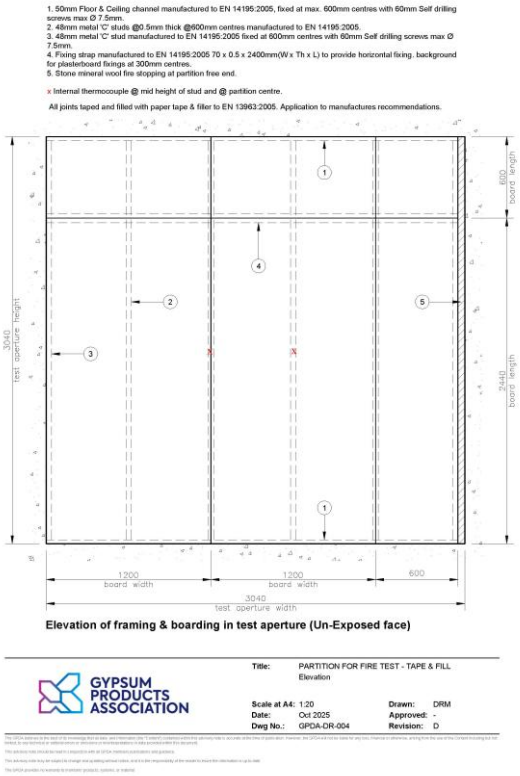
3.4 Insulated non-loadbearing wall, which satisfies both the integrity and insulation criteria for the anticipated fire resistance period.

3.5 Uninsulated non-loadbearing wall, which satisfies the integrity and/or the radiation criteria for the anticipated fire resistance period, but which is not intended to provide insulation.

BS EN 1364–1 also considers partial glazed partitions in combination with a drywall system. The substantiation of these systems falls to the manufacturers said glazing systems. Drywall partitions are commonly penetrated with, but not limited to:

Door sets tested BS EN 1634-1, with the door set manufacturer/supplier as the test sponsor. As such they are the providers of test evidence. The subsequent report provides evidence of the co-ordination and critical fixing element and supporting structures of their product within the drywall system. This rationale is also followed by fire stopping tested to BS EN 1366-3 & Fire resistant duct systems to BS EN 1366-1 & 8, electrical back boxes, tested to BS EN 1364-1 by their manufacturers. GPDA member have continued to invest in fire resistance testing to BS EN 1364-1 which provides the system performance of an imperforate partition.

(Exposed partition)



BS EN 1364-1 overview

The tests to BS EN 1364-1, undertaken by members of the GPDA consider horizontal and vertical board joints, defection heads. Furnace control time temperture curve is provided by BS EN 1363-1.

DIAP

With a test specimen of 3.000m high, this can be extended in height by up to 1.000m under this standard and DIAP (Direct field of application). Where a deflection is <h/30mm is achieved.

EXAP

Further extension in height can be achieved under EXAP classification (Extended Field of Application) using BS EN 15254-3.

BS EN 13501–2

BS EN 13501–2 *Fire classification of construction products and building elements Classification using data from fire resistance and/or smoke control tests, excluding ventilation services,* provides a method of classification to evaluate the fire resistance test results from BS EN 1364–1.

The classification performance criteria for satisfaction are:

- *Integrity (E)* – As defined by the test specimen of a separating element of the building construction, when exposed to fire on one side, will prevent the passage of flames and hot gases through and prevent the occurrence of flames on the un-exposed side. Measurement equipment/criteria – Cotton pad - Sustained flame - Gap gauge.
- *Insulation (I)* – Requirement is the mean temperature across all thermocouples place on the un-exposed side of the specimen is not ≥140°C +ambient or a single thermocouple to the un-exposed side is not ≥180°C +ambient.

The final fire resistance tests results are expressed stating the EI along with the time period achieved 30, 60, 90 or 120 minutes (EI30, EI60, EI90 & EI120), these are the most common periods however, drywall systems when designed can achieve EI180 & EI240 minutes.

(1) Source BS EN 1364–1