Note on Safe Use of Combustible Acoustic Insulation

Patrick de Kort, Regulatory Affairs Manager, EUROPUR, p.dekort@europur.org

Flexible Polyurethane foam (PUF) can be applied on the interior side of walls, partitions or ceilings for the purpose of sound treatment, sound insulation, sound absorption or for otherwise altering the acoustic properties of a room. PUF – like all other combustible materials – presents a fire hazard that needs to be addressed.

Materials used for acoustic insulation should be tested for fire performance; however, it should be noted that not all fire safety standards are equal. Standards tend to be designed taking into account the hazard of the situation in which the material is used. For example, FMVSS 302 is an automotive test standard designed to protect the occupant(s) of an automotive vehicle, from which people can generally escape in a matter of seconds. On the other hand, there are standards for mass transportation (e.g. EN 45545) where in case of fire a larger number of occupants have to vacate a confined space. Standards tend to differ in, amongst other things: the energy source used for ignition, test setup, and outcome metric (e.g. ignitability, heat/smoke release, dripping). Just because a PUF material passes a specific fire safety test does not mean it will always be an appropriate and safe material in all use cases. **Suppliers of acoustic insulation should clearly state the standards to which the acoustic insulation has been tested and, where applicable, the rating achieved.**

When installing such PUF acoustic insulation, requirements of applicable building and fire codes (national and/or local) need to be met at all times. Such codes are built around fire safety. They normally require the use of a thermal barrier to be installed over combustible materials such as PUF (e.g. gypsum board) and may require the material to pass defined fire safety tests. **Any person or entity installing combustible material (e.g. PUF) on the interior side of walls, partitions or ceilings must review national and local building codes, fire codes, insurers and manufacturer's specifications and installation instructions in each specific instance of product application, system design, and building occupancy before the installation of the said material**.

Next to- or on top of- the requirements specified in building and fire codes, **we recommend that**, unless strictly necessary (e.g. in acoustic anechoic chambers[1]), **any combustible material like PUF applied to the interior side of walls, partitions, or ceilings of buildings is covered by a thermal barrier**. Indeed, all flexible polyurethane foam types, whether they contain flame retardants or not, should be considered combustible and handled accordingly.

In the past combustible material (e.g. decorations and acoustic insulation) that was not covered by a thermal barrier have contributed to fires in public buildings with high occupancy rates such as event venues, bars, and night clubs. In some cases where fire safety measures were lacking (e.g. fire alarms) and/or subverted (e.g. blocked fire exits) this resulted in fatalities. As such it is **recommended that suppliers of combustible acoustic insulation material provide the following information along with their product: "Not to be used without ensuring compliance with applicable fire safety standards and regulations, particularly for buildings with high occupancy rates such as event venues, bars, and night clubs."**

Legal notice

This short note prepared by EUROPUR (European association of Flexible Polyurethane Foam Block Manufacturers) is intended to provide general information to persons who may use polyurethane flexible foam on the interior side of walls and ceilings. It is not designed to create legal rights or obligations. It is not intended to be a "how – to" manual, nor is it a prescriptive guide. All persons using polyurethane flexible foam on the interior side of walls and ceilings have an independent obligation to ascertain that their actions are in compliance with current national building codes and local laws. This note is necessarily general. For the application intended you can also consult the manufacturer for further information regarding specific testing, performance and code acceptance details of a given product. You can also consult fire code officials and insurers on specifications and installation instructions.

[1] In such cases material tested to stringent fire safety standards and/or achieving higher ratings, should be used **in combination with** further fire safety measures (e.g. fire alarms, fire doors, fire suppression systems).