

ADCO CPR



Guidelines for Risk Assessment of Harmonised Construction Products

**(pursuant to Reg. (EU) No 305/2011 and
Reg. (EU) 2024/3110)**

Guidelines for Risk Assessment of Harmonised Construction Products**A. Introduction**

A. INTRODUCTION	3
What is market surveillance?	3
Why assessing risks?	3
Legal basis	4
Types of risks	4
When to assess the risk	5
Choice of the right risk assessment method	5
Why a sector-specific guideline for risk assessment for (harmonised) construction products?	5
B. RISK ASSESSMENT METHODOLOGY IN CASE OF FORMAL NON-COMPLIANCES	8
C. RISK ASSESSMENT METHODOLOGY IN CASE OF RISKS LINKED TO INSTALLATION / DIRECT USE OF THE CONSTRUCTION PRODUCT (E. G. BY CONSTRUCTION WORKER)	9
D. RISK ASSESSMENT METHODOLOGY IN CASES WHERE A DEVIATION BETWEEN THE DECLARED AND THE ACTUAL PERFORMANCE OF A CONSTRUCTION PRODUCT HAS BEEN DETECTED	10
I Why a sector-specific procedure for the risk assessment of harmonised construction products regarding deviations between declared and actual performances?	10
II Scope of application of the risk assessment method for harmonised construction products in the event of deviations between declared and actual performances	12
III Prerequisites for risk assessment in the event of a performance deviation	12
IV Objective of the risk assessment	13
V Public interest at risk	13
VI Stages of the assessment process	14
VII Risk assessment procedure in the event of a performance deviation	14
A Identification of the risk.....	15
1. Identification of the construction product	15
2. Identification of the hazard	16
3. Identification of the public interests at risk	17
B Analysis of the risk.....	18
1. Description of the relevant damage scenario (failure effect)	18
2. Description of the potential damage	19
C Assessment of the risk	19
1. Initial assumption:	19
2. Assessment of the effect in the harm scenario	20
3. Assessment of the severity of the harm / damage	22
4. Taking into account the extent of the deviation as well as other factors	24
5. Determination of the degree of risk	24
VIII Summary of several individual assessments	26
IX Recommendation – Review the risk assessment	26
X Safety Gate notification and measures	27
E. RISK ASSESSMENTS REGARDING A CONSTRUCTION PRODUCT THAT PRESENTS A RISK FOR THE FULFILMENT OF THE BASIC REQUIREMENTS FOR CONSTRUCTION WORKS, TO THE HEALTH OR SAFETY OF PERSONS OR TO OTHER PUBLIC INTERESTS ALL WHILE BEING IN CONFORMITY WITH THE CPR REQUIREMENTS	28

Guidelines for Risk Assessment of Harmonised Construction Products

A. Introduction

A. Introduction

These guidelines have been prepared by the Administrative Cooperation Group (ADCO) of the EU market surveillance authorities for the sector covered by the Construction Products Regulation (EU) No 305/2011 and (EU) 2024/3110) – in short ADCO CPR.

The document first describes market surveillance and risk assessment in general (not sector-specific) and then explains the particularities in regard to harmonised construction products.

Risk assessment is an essential responsibility of the market surveillance authorities. It serves as the basis for the decision of whether a harmonised construction product that has been made available on the market presents a (serious) risk. For the purpose of Europe-wide uniform and efficient action, ADCO CPR is providing risk assessment methods, which can be used by market surveillance authorities as tools for the uniform review and technical assessment of construction products.

What is market surveillance?

Market surveillance is the activity carried out by authorities to ensure that products on the market are in conformity with the applicable laws and regulations and comply with the existing EU health and safety requirements. It is crucial to keep the European market safe and to foster trust among consumers, economic operators and users. It also helps maintain a level playing field for those companies that comply and thus avoid losing market share to non-compliant traders.

Market surveillance covers a wide range of actions, including the monitoring and control of the market and, where necessary, the imposition of corrective measures and penalties. It involves close contacts of authorities with economic operators (manufacturers, importers, distributors, online platforms, retail shops) as well as with end users / consumers and consumer organisations.

In the EU, the national market surveillance authorities are responsible for carrying out market surveillance. They are also responsible for taking the appropriate measures in case they find a non-compliant¹ product. To this end, they take samples for inspection or obtain samples not only from brick-and-mortar shops but also from the online market - that they test in specialised laboratories.

(See also: https://single-market-economy.ec.europa.eu/single-market/goods/building-blocks/market-surveillance_en)

For a European-wide uniform implementation of the provisions of the legislation within the single market, the European market surveillance authorities meet and coordinate in informal groups, called Administrative Cooperation Groups (ADCOs). The ADCO CPR develops tools in its Working Groups to help to increase the efficiency of market surveillance as well as to ensure a uniform approach. One of these tools are these guidelines on risk assessment on (harmonised) construction products.

Why assessing risks?

European legislation provides rules for the placing of products on the market. These rules might restrict the raw materials a product can be made of, demand safety features, prescribe certain information to

¹ 'Non-compliant' in the area of harmonised construction products means that e. g. the declaration of performance (DoP) or the declaration of performance and conformity (DoPC), the CE marking or the technical documentation does not formally meet the legal requirements, that the manufacturer declares performances in regard to essential characteristics in the declaration of performance that the product does not actually meet or that the construction product presents a risk for the fulfilment of the basic requirements for construction works and therefore for the integrity of the construction work, to the health and safety of persons or to other public interests all while being in conformity with the CPR requirements.

Guidelines for Risk Assessment of Harmonised Construction Products

A. Introduction

be provided with the product (such as a declaration of performance) or a warning notice to be attached etc... If a product is in conformity with these rules, the product is considered to be reliable (and finally safe) to be used (according to its intended use). With the information provided with the product in accordance with the corresponding provisions (e. g. CE marking, labelling, instructions, user manual, safety data sheet, declaration of performance etc.) the consumer / end user is enabled to use the product as intended (and thus finally in a safe manner).

If a product is **not in conformity** with the European provisions, the product might be associated with a **risk**

for the protection of public interests (such as the fulfilment of the basic requirements for construction works, the integrity of construction works, health and safety or environmental or economic issues). Some non-conformities might result only in minor negative effects with a low probability to occur, others might entail a high probability of death.

To initiate adequate action, the market surveillance authorities (as well as the manufacturers) must assess the risk a non-conforming product presents.

Legal basis

The provisions of both **Regulation (EU) No. 305/2011** and **Regulation (EU) 2024/3110** apply to the market surveillance of harmonised construction products. If no specific provisions are provided there, **Regulation (EU) 2019/1020 (Regulation on Market Surveillance and Compliance of Products – MSCR) applies**. In some cases, **other EU legislation** (like **GPSR**, **ESPR**) might also have to be considered.

With respect to the concept of 'serious risk' the general provisions of the MSCR, Article 19, apply.

Article 19 MSCR:

- (1) Market surveillance authorities shall ensure that products presenting a serious risk are withdrawn or recalled, where there is no other effective means available to eliminate serious risk, or that their being made available on the market is prohibited. Market surveillance authorities shall inform the Commission thereof immediately, in accordance with Article 20.
- (2) A decision whether or not a product presents a serious risk shall be based on an appropriate risk assessment that takes account of the nature of the hazard and the likelihood of its occurrence. The feasibility of obtaining higher levels of safety and the availability of other products presenting a lesser degree of risk shall not constitute grounds for considering that a product presents a serious risk.

Types of risks

The market surveillance authorities distinguish between a risk in general, a serious risk and a concrete imminent danger.

A risk in general is a **low, medium or high risk** (categories derived from Delegated Regulation (EU) 2024/3173) which is more or less likely to occur and which may result in more or less severe damage.

This classification needs to be distinguished from the concept of a **serious risk** where a higher damage potential is combined with a higher probability.

For these cases, Regulation (EU) 2019/1020 (Market Surveillance Regulation (MSCR)) sets out special rules in Articles 19 and 20. If a product presents a serious risk and the MSA considers that the reasons which prompted the measure or the effects of the measure go beyond the territory of the respective Member State, a notification in the Safety Gate Rapid Alert System has to be initiated.

Guidelines for Risk Assessment of Harmonised Construction Products

A. Introduction

When there is a concrete **imminent danger**, the probability of damage occurring is so high that the market surveillance authority has to take immediate measures without giving the economic operator the opportunity to give a statement beforehand ('every second counts') (e. g. without direct action the risk is high that the construction works will collapse within the foreseeable future).

When to assess the risk

The moment a Market Surveillance Authority (MSA) (or the manufacturer or an economic operator) gets aware of a non-conformity, it has to be assessed if there is a concrete **imminent danger** (based on the facts present). In general, this follows no formal procedure and often is based on experience and/or common sense / good judgement. Whether a concrete imminent danger arises must be validated (preferably by at least two experts) and if so, immediate measures must be taken. Whenever new aspects regarding the non-conformity become known, the assessment of whether there is a concrete imminent danger at hand has to be repeated.

When an MSA, after finding a product does not comply with the requirements laid down by the CPR, considers to have sufficient information, it chooses the most appropriate risk assessment method in light of the respective non-conformity determined. This method should be one of those provided by this Guideline.

If new facts become known at any time during the market surveillance procedure (e. g. during the hearing), it must be checked whether these have an influence on the risk assessment, which then might have to be adjusted.

Choice of the right risk assessment method

A risk in general (or in regard to the usage of a product) can be assessed in different ways. For consumer products, for instance, a range of methods have been used to quantify risks in the past, such as a nomograph method, a matrix method as well as the method previously recommended for EU's RAPEX rapid alert system as described in Implementing Decision (EU) 2019/417 – Guidelines for managing the European Union rapid information system 'Safety Gate',
<https://eur-lex.europa.eu/legal-content/EN-DE/TXT/?uri=LEGISSUM:4390682>.

With the Commission Delegated Regulation (EU) 2024/3173 of 27 August 2024 the European Commission implemented a horizontal risk assessment method for products subject to Regulations (EU) 2023/988 and (EU) 2019/1020. It has to be used to assess **health** and **safety** risks of products (Annex II, point 2.2.1 of Reg. (EU) 2024/3173). In case of risks to other public interests as **health** and **safety**, the Member States are held to take into account the specific requirements of the Union harmonisation legislation, including the specific nature of interests protected by that legislation and the requirements to be fulfilled by the products to ensure the protection of those interests (Annex II, point 2.2.2 of Reg. (EU) 2024/3173).

Why a sector-specific guideline for risk assessment for (harmonised) construction products?

By affixing the CE marking, the manufacturer states that his product is in conformity with EU legislation. In regard to consumer products and most other products, this generally means the product is safe to be used respecting the product-specific rules.

Most products generally are used directly by one consumer or end user.

For example, the former Risk Assessment Guidelines for Consumer Products (part of Implementing Decision (EU) 2019/417) refer to a hammer for illustration. This hammer can break if used and the head of the hammer might come off, hit and hurt the user. This damage scenario

Guidelines for Risk Assessment of Harmonised Construction Products

A. Introduction

is quite straight forward and can be split into a few steps to calculate the probability of occurrence.

Construction products are, mostly, intermediate products. They are foreseen to be used in a building, which in turn would generally have a service life of +/-50 years. This means that a potential risk presented by a construction product only materialises when they are installed / integrated in construction works / buildings. Construction products differ from 'normal' / standard consumer products in many ways.

Harmonised construction products are mainly defined by their performance in regard to essential characteristics. Rather than with a 'declaration of conformity', which implies that the product in question is conform with all relevant EU legislations and could be seen as '*safe to be used*', construction products come with a declaration of performance (Reg (EU) 305/2011 – DoP) or declaration of performance an conformity (Reg 2024/3110 – DoPC). The DoP/DoPC enables the planner² of the construction works³ and/or the construction worker to assess if the construction product (with its declared performance) is suitable for the construction project. So, for construction products the CE marking as well as the DoP/DoPC stand on the one hand for their conformity and on the other hand for their **reliability** (does the product meet the declared (promised) performance?).

Only after construction products have been 'used' directly by a construction worker to erect a building do they fulfil their actual task, i. e. being part of a whole building which itself is used (the construction product then is used indirectly as part of the building).

In consequence, if non-compliant, construction products present a risk 'only' in regard to the **integrity of the construction works** by not fulfilling the basic requirements for construction works, as laid out in Reg. (EU) 305/2011 Annex I, respectively in Reg. 2024/3110 Annex I. Only in the next step might the construction works (and not the product itself) present a risk for **health** and **safety** or other public interests.

So, while the CE marking on a construction product still means that the product is in conformity with EU legislation, it does not mean, that it is safe to be used as such – it 'only' enables the planner to construct a reliable and therefore 'safe to be used' building.

On the one hand, a construction product is used directly by the construction worker – this leads to a similar possible damage scenario as described in the Risk Assessment Guidelines for Consumer Products or Annex II of Reg. (EU) 2024/3173.

On the other hand, after being installed a construction product is used indirectly by multiple users of a building. It fulfils its function while interacting with many other construction products and in a variety of different application scenarios. E. g. an insulation material might be used for thermal insulation of a single-story house or a skyscraper, each with different requirements for the fire behaviour. There also can be different possibilities for the installation (glued directly to the wall or affixed to it with an air gap). Likewise, it might be used for sound insulation purposes. These multiple scenarios that can apply to one and the same product are more complex as the ones for (consumer) products that are handled directly. It is not possible to describe **one** straight forward damage scenario for these products.

It also has to be kept in mind that the market surveillance authorities are responsible for construction products on the market with all their possible applications and not for a specific application in a specific construction work.

Therefore, very different types of risks scenarios can apply in regard to a construction product:

- There might risks in regard to formal non-conformities (incomplete or misleading information in the CE marking, Declaration of Performance, technical documentation etc.).

² Planner includes architect, structural engineer, person responsible for the construction work, designer etc.

³ Construction works is defined as buildings and other civil engineering works in accordance with Reg. (EU) No 305/2011 and Reg. (EU) 2024/3110

Guidelines for Risk Assessment of Harmonised Construction Products**A. Introduction**

- There might be risks for the construction worker while handling or integrating the construction product into the construction works / building.
- There might be risks when the construction product actually has different performance levels as declared by the manufacturer in regard to the essential characteristics.
- There might be risks in regard to non-harmonised aspects of a construction product (not (yet) covered by the harmonised technical specification)
- etc.

For each of these areas of potential risk, a different risk assessment method might be more suitable to be taken into account than another.

With these guidelines, ADCO CPR suggests harmonised risk assessment methods for each of the above-mentioned scenarios and provides recommendations for their application. Each market surveillance authority is free to choose the methods it considers best for assessing the risk of a specific product.

B. Risk assessment methodology in case of formal non-compliances

This part is still under development.

Guidelines for Risk Assessment of Harmonised Construction Products

III. – Risk assessments linked to installation / direct use of the construction product

C. Risk assessment methodology in case of risks linked to installation / direct use of the construction product (e. g. by construction worker)

For cases where a risk to **health** or **safety** might be involved while directly handling / using / installing the construction product the Risk Assessment Methodology given in Annex II of Reg. (EU) 2024/3173 should be applied.

Guidelines for Risk Assessment of Harmonised Construction Products**IV. – Risk assessments in the event of a deviation between declared and actual performance****D. Risk assessment methodology in cases where a deviation between the declared and the actual performance of a construction product has been detected**

The present procedure for the risk assessment of harmonised construction products in the event of deviations between the declared and actual performance had been developed in 2017 and is essentially based on the EU general risk assessment methodology from 2015⁴. Due to the experiences of the market surveillance authorities with the method it has been revised and optimised in 2023, also taking into account the updated risk assessment guidelines for consumer products from 2018.⁵ The current version also takes into account Commission Delegated Regulation (EU) 2024/3173 of 27 August 2024 [Rules on access to and operation of the Safety Gate Rapid Alert System, information to be entered in that System, notification requirements and the criteria for assessment of the level of risk].

I Why a sector-specific procedure for the risk assessment of harmonised construction products regarding deviations between declared and actual performances?

By affixing the CE marking, the manufacturer states that his product is in conformity with EU legislation. In regard to consumer products and most other products, this generally means the product is safe to be used respecting the product specific rules.

In contrast, for construction products the manufacturer has to draw up a declaration of performance (Reg. (EU) No 305/2011) – 'DoP' or respectively a declaration of performance and conformity (Reg. (EU) 2024/3130) – 'DoPC'. With the DoP/DoPC, the planner⁶ of a construction work⁷ can choose which construction products are suitable to fulfil the requirements of (that part of) the construction work. The end user then is not using the construction product itself but the building it has been integrated in (in combination with other products). So, the CE-marking on a construction product still means that the product is in conformity with EU legislation, but it does not mean, that it is safe to be used as such – it 'only' enables the planner to complete a reliable and safe to be used construction work.

In consequence, if non-compliant, construction products present a risk 'only' in regard to the integrity of the construction works by not fulfilling the basic requirements for construction works, as laid out in Reg. (EU) 305/2011 Annex I, respectively in Reg. 2024/3110 Annex I. Only in the next step might the construction works (and not the product) present a risk for **health** and **safety** or other public interests.

The risk assessment method given in Annex II of Reg. (EU) 2024/3173 is explicitly designed for assessing the intrinsic product hazard that can cause an adverse effect for users (see Annex II, point 3.1.1 of Reg. (EU) 2024/3173).

⁴ It has to be noted that the EU general risk assessment method from 16 October 2015 meanwhile has been updated to the Risk Assessment Guideline within the Guidelines for the EU rapid information system Safety Gate (Implementing Decision (EU) 2014/417).

The general concept of the risk assessment methodology has not changed however. Therefore, it was not deemed necessary to change the risk assessment method for construction products.

⁵ Commission Implementing Decision (EU) 2019/417 of 8 November 2018 is laying down guidelines for the management of the European Union Rapid Information System 'Rapex' established under Art. 12 of Directive 2001/95/EC on general product safety and its notification system.

⁶ Planner includes architect, structural engineer, person responsible for the construction work, designer etc.

⁷ Construction works is defined as buildings or other civil engineering works pursuant to Reg. (EU) No 305/2011, respectively Reg. (EU) 2024/3110.

Guidelines for Risk Assessment of Harmonised Construction Products**IV. – Risk assessments in the event of a deviation between declared and actual performance**

1st: As a prerequisite for using this risk assessment method for harmonised construction products regarding deviations between declared and actual performance, in the damage scenario the product has to be deemed as integrated into a construction work. The product then is no longer used directly – the construction work is used, and the intrinsic product hazard only affects the user of the construction work indirectly.

2nd: In regard to the essential characteristics and associated performance levels, the product itself does not present an intrinsic product hazard. Only in combination with other construction products integrated in a construction work, a deviation between the declared and the actual performance might have an effect on the functionality of the construction work. The use of the construction work then might present a risk to the health and/or safety of the user or to other public interests.

Additionally, the risk assessment method given in Annex II of Reg. (EU) 2024/3173 contains instructions for Member States to set up a harm scenario in no more than 5 steps leading to harm (see Annex II, Section 3.2.4 of Reg. (EU) 2024/3173) and to attribute a numerical probability to each of these steps which then will be multiplied to provide the overall probability of the harm scenario (see Annex II, point 3.4). Some remarks on this approach:

First: As construction products are not used by the end user directly but only indirectly after being integrated into construction works (buildings, bridges, streets etc.) in combination with a variety of other construction products, the harm scenarios are generally much more complex as for 'typical' consumer or end-user products. **It is not possible to split these harm scenarios into a maximum of five steps to which a simple probability of occurrence can be given.**

Second: There are **no statistics available**.

Third: The risk assessment method of Reg. (EU) 2024/3173 is written to assess the risk of ONE product harming ONE user of the product. Construction products are not used directly by a user in general. In return, a lot of people will generally use the construction work the product has been integrated into (such as bridges, houses, skyscrapers etc.). Additionally, not only one product but several will have been integrated into the construction work. **This, too, makes the application of the risk assessment method of Reg. (EU) 2024/3173 impossible in most cases.**

Construction products are not usually consumer products or products for end users and, in addition to any requirements for the product itself, must have the characteristics which are necessary for the use in construction works, for which they are intended, to fulfil the basic requirements for construction works. Therefore, AdCo-CPR provides specific risk assessment methods, which can be used by market surveillance authorities as tools for a uniform review and technical assessment of construction products.

For construction products, different uses within construction works and a large number of potential interactions with other construction products can come into consideration. The same construction product might also have to fulfil different requirements depending on the place and type of installation (e. g. installation in escape routes or in domestic rooms, installation of an insulation material in the wall (outdoor or indoor) or in the floor etc.).

With construction products, due to diversity of possible uses that may arise in construction works, determining numerical probabilities of occurrence of damage directly, in the same way as for consumer and end-user products in the risk assessment methodology of Reg. (EU) 2024/3173 is highly problematic and can only be done indirectly (cf. also Section VII C 6).

Guidelines for Risk Assessment of Harmonised Construction Products**IV. – Risk assessments in the event of a deviation between declared and actual performance****II Scope of application of the risk assessment method for harmonised construction products in the event of deviations between declared and actual performances**

Market surveillance in the field of construction deals with construction products harmonised under the Construction Products Regulation. These are construction products that are covered by a harmonised European standard (hEN), a delegated act constituting a harmonised technical specification or in conformity with a European Technical Assessment (ETA) which has been issued for them.

The procedure for risk assessment of harmonised construction products presented below is generally only applicable to harmonised construction products for which a product test has led to the conclusion of a deviation of their actual performance from the declared performance.

III Prerequisites for risk assessment in the event of a performance deviation

A suspicion of non-compliance (in this instance to be understood as a deviation between the declared and actual performance of a product) has emerged from the active or reactive **market surveillance**, meaning that the construction product may not have the declared performance.

In a **finding of fact**, all facts significant for the suspicion of non-compliance available from the market surveillance activity are brought together, e. g. the description:

- of the check (who, how, what, when, where?),
- of the suspicion,
- of the documents,
- of the product test.

Every finding of fact is followed by a **technical assessment** of the results of the product test. If there is a **deviation** of the performance declared in the declaration of performance of the harmonised construction product from that determined in the product test which could endanger compliance with the basic requirements for construction works, this leads to the assumption that a 'risk' might be associated with the product. A more detailed technical assessment of the construction product, the essential characteristic(s) and the deviation should then be carried out, e. g.

- identification of common uses of the construction product (the intended use according to the harmonised technical specification might be quite broad but the specific design of the construction product at hand can indicate a preferred application area – e. g. thermal insulation materials have the general intended use 'thermal insulation for buildings' but the product may be designed especially for integration in the flooring (due to high compressive strength)),
- analysis of the harmonised technical specification (or ETA) and the essential characteristic(s) in question,
- review of specialist literature (cases of damage, etc.),
- ...

The technical assessment should result in a dossier with all the background information and data needed to perform the risk assessment.

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

IV Objective of the risk assessment

The **risk assessment** serves to assess the risk associated with the deviation of the declared performance from the actual performance and determine whether the construction product represents a **serious risk** pursuant to Article 19 of the MSCR. It additionally provides the market surveillance authority with a solid basis for determining and justifying appropriate measures.

V Public interest at risk

To build a construction work, the planner first has to define the needs of the construction works (taking into account the purpose of the building as well as national provisions etc.). These needs can generally be described in terms of the basic requirements for construction works as laid out in

Annex I of Reg. (EU) 305/2011:	Annex I of Reg. (EU) 2024/3110:
• Mechanical resistance and stability	• Structural integrity of construction works
• Safety in case of fire	• Fire safety of construction works
• Hygiene, health and the environment	• Protection against adverse hygiene and health impacts related to construction works
• Safety and accessibility in use	• Safety and accessibility of construction works
• Protection against noise	• Resistance to passage of sound and acoustic properties of construction works
• Energy economy and heat retention	• Energy efficiency and thermal performance of construction works
	• Emissions into the outdoor environment of construction works
• Sustainable use of natural resources	• Sustainable use of natural resources of construction works

Based on these basic requirements for construction works, standardisation requests for product standards are issued and corresponding essential characteristics for products are identified and defined.

Taking into account the performance of a product in terms of the essential characteristics, a planner can then decide which products are suitable for his construction works in order to meet the previously defined needs.

If a deviation between the declared and actual performance of an essential characteristic of a construction product occurs, the fulfilment of the needs relating to the basic requirements for construction works as set by the planner are endangered.

In consequence, the **integrity of the construction works** is at risk. The use of the construction works as intended by the planner might then lead to harm to the users' **health** or **safety**, to the **environment**, or present an **economical** risk.

In short:

A deviation between the declared and actual performance does not directly present a risk to the **health** and **safety** of its users. Only integrated (with many other construction products) into a construction work, a risk for the **integrity of the construction works** (as public interest in regard to the construction product) might be given.

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

As a secondary effect, the use of the construction works then might present a risk to public interests such as **health** and **safety**, the **environment**, the **economy** (as secondary public interests in regard of the construction works).

VI Stages of the assessment process

The risk assessment procedure for harmonised construction products is divided into three phases with ten individual assessment steps (see Table 1).

Table 1: Phases and steps of risk assessment

Phases of risk assessment	Steps of risk assessment
A Identification of the risk	1. Identification of the construction product 2. Identification of the hazard 3. Identification of the public interests at risk
B Analysis of the risk	4. Description of the relevant damage scenario 5. Description of the potential damage
C Assessment of the risk	6. Definition of the initial assumptions 7. Assessment of the effect in the damage scenario 8. Assessment of the severity of the damage 9. Taking into account the deviation and other factors 10. Determination of the degree of risk

VII Risk assessment procedure in the event of a performance deviation

If a deviation between the declared performance and the actual performance of a construction product is identified (e. g. due to product testing) within the above-mentioned technical assessment, a risk assessment should be performed immediately to allow a quick reaction.

The following sections explain the individual steps of the risk assessment procedure, illustrated by examples. A blank form for performing the risk assessment has been provided for uniform and simple application of the procedure (see Figure 1).

If deviations in multiple essential characteristics and/or their (sub)properties⁸ result from the technical assessment, or if the risk in regard to the integrity of the construction works results in multiple secondary public interests (e. g. life/health, environment and economy) are affected, the risk of each deviation should first be assessed separately.

After the conclusion of all individual risk assessments, the results should be summarised and analysed in terms of whether they are independent of each other or have an attenuating or amplifying effect on the total risk. This should be recorded in a final conclusion for the construction product assessed.

⁸ In some harmonised standards, an essential characteristic is divided in several (sub)properties (e. g. for Thermal insulation materials in accordance with EN 13163:2012+A1:2015, the essential characteristic 'thermal resistance' is divided in the three (sub)properties 'thermal resistance', 'thermal conductivity' and 'thickness').

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

The result of the risk assessment should finally be declared as:

'low risk', 'medium risk', 'high risk' or 'serious risk'.⁹

Form for risk assessment
Procedure: _____ Date: _____

A Identification of the risk

Identification of the construction product

Product name (general)	Trade name of the product
Unique identification code of product type	Batches, if applicable
Number of the DoP/DoPC	Manufacturer
Technical specification	
Intended use	

Identification of the hazard

Basic requirement/s for construction works	
Essential characteristic (Sub)property	
Description of the deviation	
Description of the failure mode	

Identification of the public interest at risk

Integrity of the construction works	
-------------------------------------	--

Identification of the secondary public interests at risk

Life / Health	
Environment	
Economy	

B Analysis of the risk

Description of the relevant harm scenario (failure effect)	Description of the potential harm / damage
--	--

Form for risk assessment
Procedure: _____ Date: _____

C Assessment of the risk

Initial assumption:
(starting point of risk assessment; e. g. fire is already in place for BWR 2 etc.)

Assessment of the effect in the harm scenario	Assessment of the severity of the harm / damage
Initial degree of effect of failure (in regard of the relevance of the essential characteristic for the harm scenario in general):	Initial degree of severity of the harm / damage (in regard of the relevance of the essential characteristic for the harm scenario in general):
Taking into account of the extent of the deviation as well as other factors	Taking into account of the extent of the deviation as well as other factors
Final degree of effect of failure (in regard of the deviation):	Final degree of severity of the harm / damage (in regard of the deviation):

Determination of the degree of risk

Degree of the failure effect						Degree of severity of the harm / damage	Risk level
1	2	3	4	5	6		
						F	Low risk
						E	Medium risk
						D	High risk
						C	High risk
						B	High risk
						A	Serious risk

The construction product presents a _____ risk.

Figure 1: Blank form for risk assessment (see also Annex 1)

A Identification of the risk

1. Identification of the construction product

The risk assessment procedure needs to clearly specify which construction product is the object of the risk assessment.

Product name (general)

A general description / generic name for the type of products in question – e. g. 'EPS thermal insulation'.

Trade name of the product

The trade name or brand under which the product is being made available on the market – e. g. 'Polystyrol 2000'

Unique identification code of the product type

As given in the DoP/DoPC¹⁰ and CE-marking – e. g. 'EPS 035 100 DEO/WAB'

Note: In some cases, a manufacturer might summarise different variants under the same unique identification code of the product type (e. g. different lengths or widths of the product or different head forms for screws).

⁹ These different risk classifications correspond to the ones as given in Annex II of Reg. (EU) 2024/3173

¹⁰ either/or - what is relevant in each case, depending on the applicable regulation - either Reg (EU) 305/2011 or Reg (EU) 2024/3110, both: CPR

Guidelines for Risk Assessment of Harmonised Construction Products**IV. – Risk assessments in the event of a deviation between declared and actual performance**

The product type is defined as the set of representative performance levels or classes of a construction product, in relation to its essential characteristics, produced using a given combination of raw materials or other elements in a specific production process (cf. Article 2(9) Reg. (EU) 305/2011). In this instance, it must therefore be assumed that the identified deviation can occur **in all variants**.

As part of the finding of facts or the hearing, the manufacturer may give a plausible explanation, why only one variant of the product type might show the identified deviation.

Batches, if applicable

Note: With placing the CE marking on the product, the manufacturer declares that each of these products placed on the market complies with the declared performance. As the market surveillance authorities generally take a random sample from the market, they do not have any indication that the found deviation is limited to the batch they checked. Therefore, it must be assumed that the identified deviation occurs **in all batches**.

As part of the finding of facts or the hearing, the manufacturer should be given the opportunity to explain the reason for the deviation (e. g. change of raw material or its provider, irregularities in the factory production control). With this information, it might be possible to identify and therefore 'reduce' the number of affected batches. This would not change the overall risk classification but the number of products to be taken into account for corrective measures later on.

Number of the DoP/DoPC

As given in the DoP/DoPC and the CE marking.

Technical specification

As given in the DoP/DoPC and the CE marking, including the version – e. g., 'EN 13163:2012+A1:2015'.

Intended use

The 'Intended use' as stated in the DoP/DoPC and the CE marking, not the one stated in the harmonised technical specification – e. g. 'thermal insulation for buildings – floor construction'.

Note: The intended use given in harmonised standards can be very broad (e. g. 'thermal insulation for buildings'). Some manufacturers might limit the intended use for their products to special applications within the range of the intended use of the standard (e. g. 'thermal insulation for buildings – floor construction'). This is a very helpful information as this also limits the damage scenarios to be taken into account in the risk assessment later on.

Manufacturer

Name and address of the manufacturer, as given in the DoP/DoPC and CE marking.

2. Identification of the hazard

The deviation of the declared performance from the actual performance resulting from the technical assessment should be described concisely.

Essential characteristic

The essential characteristic where the deviation had been found should be listed.

Guidelines for Risk Assessment of Harmonised Construction Products**IV. – Risk assessments in the event of a deviation between declared and actual performance**(Sub)property

In some harmonised standards, an essential characteristic is divided in several (sub)properties (e. g. for thermal insulations in accordance with EN 13163:2012+A1:2015, the essential characteristic 'thermal resistance' is divided in the three (sub)properties 'thermal resistance', 'thermal conductivity' and 'thickness').

Sometimes the (sub)properties may be hidden as the product standard refers to another standard (e. g. according to EN 13501-1:2018, the essential characteristic 'fire behaviour' consist of the (sub)properties 'fire behaviour', 'smoke production' and 'flaming droplets/particles' – depending on the declared class).

In these cases, list the relevant (sub)property here additionally to the essential characteristic above.

Description of the deviation

State the difference between the declared performance and the performance from the test results. If an essential characteristic or its (sub)property is declared as a class, please state the limit value of the declared class and the corresponding test result. If the class consist of several parameters, please state the individual results for the parameters (e. g. according to EN 13501-1:2018, four parameters have to be taken into account for class B of the essential characteristic 'fire behaviour': FIGRA_{0,2MJ}, LFS, THR_{600s} and Fs).

Description of the failure mode

The failure mode describes what a deviation in the essential characteristic or its (sub)property means in regard to the product itself (the effect on the construction works will be described in the next section) – e. g. for thermal insulation and the essential characteristic 'thermal resistance', the product transports more heat or offers less resistance to the heat flow than declared.

Note: It might be that the actual performance is 'better' than the one declared. In most of these cases there is no actual deviation as the 'better' performance also covers the declared performance and an over performance generally doesn't result in a risk.

3. Identification of the public interests at risk

As described before (see Section V), the primary public interest at risk in regard to the construction product is the **integrity of the construction works**. The secondary public interests at risk in regard to the use of a construction work, where the construction product at hand might be integrated in, needs to be determined. Several secondary public interests might be at risk simultaneously. If it can be assumed that the risk to one public interest affected significantly outweighs the risks to other public interests affected, it is sufficient to perform the assessment on the basis of only the potentially highest risk.

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

Example:

Identification of the risk			
Identification of the construction product			
Product name (general)	EPS thermal insulation	Trade name of the product	Polystyrol 2000
Unique identification code of product type	EPS 035 100 DEO/WAB	Batches, if applicable	all batches and variants (thicknesses)
Number of the DoP/DoPC	DoP5678-2024/1	Manufacturer	Sample Company AG Samplestreet 5 12345 Samplingen EU-Country
Technical specification	EN 13163:2012 +A1:2015		
Intended use	Thermal insulation for buildings		
Identification of the hazard			
Basic requirement/s for construction works	6. Energy economy and heat retention (Reg. (EU) 305/2011) / 6. Energy efficiency and thermal performance of construction works (Reg. (EU) 2024/3110)		
Essential characteristic	Thermal resistance		
(Sub)property	Thermal conductivity and thermal resistance		
Description of the deviation	In the DoP following values for the (sub)properties have been given: - Thermal conductivity: $\lambda_D = 0,034 \text{ W/(mK)}$ - Thermal resistance: $R_D = 1,47 \text{ m}^2\text{K/W}$ The actual performances of the tested products showed a higher thermal conductivity and a lower thermal resistance: - Thermal conductivity: $\lambda_{\text{tested}} = 0,0366 \text{ W/(mK)}$ - Thermal resistance: $R_{\text{tested}} = 1,360 \text{ m}^2\text{K/W}$		
Description of the failure mode	The insulation material conducts more heat respectively offers less resistance to the heat flow than declared		
Identification of the public interest at risk			
Integrity of the construction works			
Identification of the secondary public interests at risk			
Life / Health	/		
Environment	endangered		
Economy	endangered		

B Analysis of the risk

1. Description of the relevant damage scenario (failure effect)

The description of the relevant damage scenario establishes a connection between the failure mode of the construction product and the effect of this failure on the construction works level.¹¹ To do this, it is necessary to refer to a *general installation situation*, e. g. a realistic 'worst case scenario' with respect to the indicated intended use and not to specific construction works/construction projects.

Note: Even if the market surveillance procedure came to be due to an accident, a general installation situation has to be described. Market surveillance concerns products that are or were on the market – not individual construction works where the product was used. To check whether the product presents a risk in an individual construction is the responsibility of the (national) building authority. Even if in some countries the same authority might have both responsibilities, the assessments have to be separated from each other as one of them concerns the market and the other individual construction works.

¹¹ This links the risk associated with a product based on a deviation to the risk to the **integrity of the construction works** (as a public interest), which then as a secondary step might endanger the safety and health of the user of the construction works (or other public interests).

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

In some cases, it may be necessary to consider different damage scenarios as some products may have different 'typical' ways of being installed (e. g. thermal insulation materials might be installed (a) outside in the ceiling/roof (under roof seals...), (b) inside in the ceiling/roof or floor (under screed), (c) outside on walls (under plaster...), or (d) inside on walls). Depending on the installation situation, some essential characteristics may have more or less impact – e. g. for thermal insulation the essential characteristic 'compressive strength' may be more relevant for installation situations in the floor as the floor is subject to more pressure than walls.

Note: Defects that may arise from theoretical improper transport, storage and use as well as possible corrective measures in practical use situations have to be disregarded at this stage.

2. Description of the potential damage

After the description of the damage scenario, the potential damage resulting from this scenario can be determined. Again, a realistic *worst case* should be assumed.

The list below is non-exhaustive:

- Possible types of damage to life/health include:
skin irritation, chemical burns, nausea, poisoning, illness, superficial injuries, serious injuries leading to reduced physical capabilities, loss of limbs, casualties etc.
- Possible types of damage to the environment include:
short or long-term air or groundwater contamination, hazardous waste, light or noise pollution, animal injury, low or high CO₂ emissions, energy leakage
- Possible types of damage to the economy include:
recurring costs, such as increased heating costs, one-time costs due to demolition/new construction/renovation

Example:

Analysis of the risk	
Description of the relevant harm scenario (failure effect)	Description of the potential harm / damage
<p>For his product the manufacturer specifies following areas of application in a building:</p> <ul style="list-style-type: none"> A) Outdoor in ceiling/roof under coverings or sealants B) Indoor in ceiling/roof or flooring under screed C) Outdoor at walls behind sealing <p>Especially for outdoor applications (A) and C)) thermal resistance is the most relevant characteristic of the product. In regard of the indoor application (B)), thermal resistance only plays a role between heated and unheated spaces, e. g. the ceiling above the basement.</p> <p>The heat losses are greater than calculated by the planner.</p>	<p>The building consumes more energy than the planer calculated. The building's thermal insulation and energy efficiency during its use are compromised.</p> <p>(Harm / Damage for the Environment and Economy)</p>

C Assessment of the risk

1. Initial assumption:

The relevant initial assumption (or starting point of the risk assessment) must also be determined. The occurrence of circumstances that are already covered by the intended use of the construction product is part of the initial assumption and not taken into account as a factor in the assessment of the effect in the damage scenario.

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

For example, the essential characteristics 'resistance to fire' or 'fire behaviour' give information about the behaviour of a product in case of fire. Consequentially, the initial assumption for the risk assessment is, that there is a fire. It then can be determined how much a deviation between the declared performance and the actual performance of the construction product influences the speed of fire spread etc. The risk assessor does not have to take into account the probability of the occurrence of a fire.

Other examples for initial assumptions are:

- for smoke alarm devices, the initial assumption includes that a fire occurs and that there are persons in the building to be warned. Both assumptions are prerequisites for the intended use of 'safety in case of fire' (in this case, to detect a fire and provide appropriate warning),
- for a space heater, the circumstance of being lighted,
- for a steel beam, its installation as a load-bearing component in construction works,
- for thermal insulation materials, temperature differences between in- and outside,
- etc.

Note: The definition of the initial assumption is not easy to make and may be questioned by the opposing party. However, the guideline for risk assessment of consumer products only takes into account the time the consumer product is used as intended, too. In the 'hammer example' of the guideline, the time the hammer is in the drawer is not regarded either; only the intended usage of the hammer.

2. Assessment of the effect in the harm scenario

Quantitative vs. qualitative probability determination:

In the general risk assessment methodology of the European Commission as well as in the risk assessment guidelines for consumer products, the probability of damage is calculated at this stage numerically. However, both methods point out that the probability calculation is the most difficult part of the risk assessment. Often the risk can only be estimated due to a lack of empirical data. Furthermore, the calculation also only uses consumer products as an example. Reg. (EU) 2024/3173 does not give any examples, but already implements the possibility to express probabilities either in a quantitative or qualitative way (see Annex II point 3.5 of Reg. (EU) 2024/3173).

However, since construction products are usually no consumer or end-user products, but instead – as intermediate products – can interact with a varying number of other construction products depending on the site of use (different building types from a simple log house to a complex skyscraper), a quantitative approach is nearly impossible for construction products. Especially as there is not the 'one' user of the construction product but most of the time many users of the construction works where the product has been integrated into. A single probability of occurrence cannot be calculated. Therefore, the probability is incorporated into the risk assessment not as a numerical value (quantitatively), but rather indirectly (qualitatively).

First, it has to be assumed that a construction product will mainly be used for its intended use. Therefore, essential characteristics decisive for the intended use have a higher impact than other essential characteristics¹². For example, thermal insulation materials will be used mainly

¹² Sometimes it is not easy to determine if an essential characteristic is decisive for the function / intended use of the construction product. As an example: the essential characteristic 'release of dangerous substances' (regarding

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

for their thermal resistance properties. In some cases, the planner of the construction works will choose a thermal insulation material not only for their thermal resistance, but also for their sound insulation properties. Following this, a deviation in the essential characteristic 'thermal resistance' is more likely to have a negative effect than a deviation in the essential characteristic 'acoustic absorption index' because the product (nearly) always will be used for thermal insulation reasons and only sometimes additionally for sound absorption.

Second, for some essential characteristics a deviation from the declared performance would have direct consequences, for others additional parameters may have to be in effect (additionally to the initial assumptions defined above) (e. g. for thermal insulation materials and the essential characteristic 'compressive strength', the product must be installed in a certain damage scenario, such as under screed in the floor and the floor must be loaded with heavy goods etc.).

Combining the decisiveness and the dependence on other parameters for negative effects, different groups of qualitative probabilities of occurrence can be distinguished.

At this stage, the **general impact** of the essential characteristic in question in regard to the intended use of the construction product and also in regard to the harm scenario (see 4. Description of the relevant harm scenario (failure effect)) is first described and then assessed in accordance with Table 2). In this process, the relevance of an essential characteristic or related (sub)property, for which a deviation has been identified, for the intended use or function¹³ of the construction product is classified (see following examples for illustration).

Examples:

Thermal insulation: In accordance with EN 13163:2012+A1:2015, the intended use for EPS thermal insulation is to provide thermal insulation of buildings.

A deviation in the essential characteristic 'thermal resistance' has a direct effect on the ability of the construction product to keep heat inside (or outside) the building to preserve energy. As a result, the probability that a deviation in this essential characteristic alone will lead to harm / damage (costs) is relatively high. The essential characteristic is decisive for the intended use of the insulation material.

In contrast, a deviation in the essential characteristic 'sound insulation' has no negative effect on the main function of the insulation material. Only in cases where the insulation material also had been chosen for sound insulation purposes, a deviation in that essential characteristic will have negative effects. The essential characteristic is not decisive for the intended use of the insulation material.

Smoke alarm devices: In accordance with EN 14604:2005/AC:2008, the function of smoke alarm devices is to detect a fire condition and provide early warning of that condition.

A deviation in (sub)property 5.17, 'sound output', of the essential characteristic 'nominal activation conditions/sensitivity, response delay (response time) and performance

emissions into indoor air) is decisive for the intended use 'use in interiors' because the emissions would accumulate in the room and would have a direct effect on the health of inhabitants (BWR 3) whereas the same essential characteristic would not be decisive for the intended use 'use in outdoor environment'.

¹³ The 'intended use' is often phrased in a somewhat abstract way in the harmonised specifications. It can be specified by the description of the 'actual function' of the construction product. For example, for smoke alarm devices, the intended use is given as 'fire safety', which is specified by the actual function of the smoke alarm device, to detect a fire condition and provide early warning of that condition (as which the function is described in Mandate M/109 [9]).

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

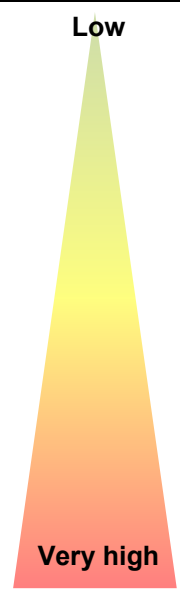
under fire condition' has a direct effect on the function of detecting smoke in the event of fire and providing early warning of it (if the smoke alarm device emits no or too little sound). As a result, the probability that a deviation in this essential characteristic alone will lead to harm / damage is relatively high.

In contrast, a deviation in (sub)property 5.19, 'inter-connectable smoke alarms', of the essential characteristic 'nominal activation conditions/sensitivity, response delay (response time) and performance under fire condition' alone has no negative effect on the function of the individual smoke alarm devices themselves in terms of detecting smoke in the event of fire and providing early warning of it. As a result, the probability that this deviation will lead to damage is very low.

Assessing the initial degree of the effect of failure

The effect in the harm scenario (failure effect) is assessed in accordance with Table 2.

Table 2: Classification of the initial degree of the failure effect (harm scenario)

Classification		Description
1	 <p>Low</p> <p>Very high</p>	The essential characteristic in question or its (sub)property is not a decisive property. It has no significant effects, even in combination with other parameters.
2		The essential characteristic in question or its (sub)property is not a decisive property. A deviation in it alone has no significant effects. However, certain values of this characteristic in combination with other parameters can have direct unfavourable effects.
3		The essential characteristic in question or its (sub)property is a decisive property, but the deviation can only have unfavourable effects to a limited extent.
4		The essential characteristic in question or its (sub)property is a decisive property. The deviation can entail unfavourable effects in combination with other parameters.
5		The essential characteristic in question or its (sub)property is a decisive property. The deviation can entail unfavourable effects alone, <i>independent</i> of the values of other parameters.

The number of the classification according to table 2 is entered in the form under 'Initial degree of effect of failure'.

3. Assessment of the severity of the harm / damage

The deviation between the declared and the actual performance of a construction product affects the **integrity of the construction works**. In consequence, the use of the construction works can harm the health or safety of its users or other public interests (see section V).

The severity of the harm / damage is classified on a scale from A (low) to F (critical). Tables 3 to 5 provide orientation.

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

Table 3: Severity of the harm / damage – life / health

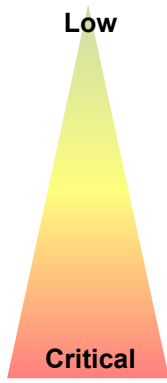
Classification		Description
A		Discomfort
B		(Light) injury
C		<ul style="list-style-type: none"> - Injury requiring immediate medical treatment - Injury producing long-term health effects
D		<ul style="list-style-type: none"> - Permanent injury that may produce immediate serious health damage - Chronic illnesses leading to a significant reduction in quality of life
E		May lead to casualty(ies) of one or a few persons
F		May lead to casualties of many persons

Table 4: Severity of the harm / damage – environment / ecology

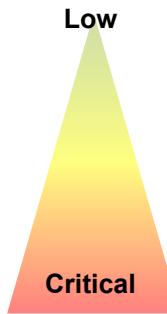
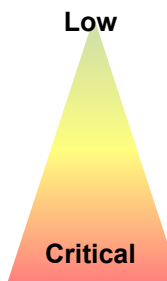
Classification		Description
A		Emission of non-critical quantities of CO ₂ , short-term smoke emission
B		Large amount of waste (non-toxic)
C		On-going risk due to light pollution/noise
D		Permanent pollution of soil and/or groundwater in a larger area
E		Permanent contamination of soil and/or groundwater in a larger area
F		- no example here

Table 5: Severity of the harm / damage – economy

Classification		Description
A		Low one-time costs
B		High one-time costs
C		Regularly recurring costs or very high one-time costs
D		Regularly recurring high costs
E		-
F		

Economic harm / damage cannot be compared to very critical injury to health or death. Therefore, the category E and F are deliberately not used here. The relation of low, high and very high costs should be derived from a model calculation in each case.

Note: Harm / damage to the economy refers not to the economic operator (manufacturer) of the construction product. It refers to the costs the non-conformity of the construction product generates for e. g. the owner of the construction works (e. g. by exchanging the non-conforming product, accepting ongoing costs due to energy leakage...).

Guidelines for Risk Assessment of Harmonised Construction Products

IV. – Risk assessments in the event of a deviation between declared and actual performance

Tables 3 to 5 serve to provide orientation. In particular for the classification of the severity of the harm / damage to the environment and the economy, empirical values are still lacking. In this context, intensive research must be conducted on a case-by-case basis for the construction product and discussed in the Group of Experts (see Section VIII), if necessary.

4. Taking into account the extent of the deviation as well as other factors

As the assessment in steps 7 and 8 is related to the essential characteristic of the product and the potential harm / damage and has been done in a general way, now the specific product related factors will be taken into account.

Especially the **extent of the deviation** of the actual performance from the indicated performance must be taken into account at this stage. It is necessary to assess whether for the classification in the harm scenario, a minor deviation warrants a lower classification or an especially large deviation should result in a higher classification. In addition, circumstances attenuating or amplifying the effect of the failure or the severity of the harm / damage can be taken into account here – for example, special safety measures or incorrect information in the technical documentation.

The factors are listed and assessed. Very small deviations might reduce the initial degree of effect of failure by 1 to 2 steps. A risk-reducing description in the installation manual can reduce the initial degree by another step. Whereas high deviation from the declared performances can likewise increase the initial degree by 1 or 2 steps. There are no fixed rules as each product has to be assessed individually.

Note: In general, an attenuating or amplifying circumstance only influences either the side of the effect of failure (the indirect probability of occurrence) or the severity of the harm / damage, but not both at the same time.

5. Determination of the degree of risk

The final degree of the effect of failure (step 9 on the left) and the final degree of the severity of the harm / damage (step 9 on the right) are entered in the risk assessment matrix (see Table 6) and result in a colour code that indicates the degree of the risk associated with the affected construction product (see Table 7).

Table 6: Matrix for determination of the degree of risk

Determination of the degree of risk									
Degree of the failure effect									
1	2	3	4	5	6				
						F	Degree of severity of the harm / damage	Low risk	
						E		Medium risk	
						D		High risk	
						C		Serious risk	
						B			
						A			

IV. – Risk assessments in the event of a deviation between declared and actual performance

Table 7: Colour code of the risk assessment matrix

Light Yellow	presents a low risk
Yellow	presents a medium risk
Orange	presents a high risk
Red	presents a serious risk.

Assessment of the risk									
Initial assumption:									
EPS insulation materials with the intended use "thermal insulation for buildings" (as according to annex ZA.1 of EN 13163) are used, to keep the energy consumption of a building low. Therefore, the initial assumption is, that the insulation material is relevant for the energy efficiency calculation.									
Assessment of the effect in the harm scenario In regard of the intended use "thermal insulation of buildings" the essential characteristic "thermal resistance", with its (sub)properties "thermal conductivity" and "thermal resistance", is a decisive property. Deviations can entail unfavourable effects in combination with other parameters, such as the area of installation as well as the temperature differences.					Assessment of the severity of the harm / damage The increased energy consumption throughout the entire service life of the building places an ongoing burden on the environment and results in ongoing increased costs.				
Initial degree of effect of failure (in regard of the relevance of the essential characteristic for the harm scenario in general):			4		Initial degree of severity of the harm / damage (in regard of the relevance of the essential characteristic for the harm scenario in general):			C	
Taking into account of the extent of the deviation as well as other factors The difference between the tested and the declared values are relatively small (about 8%). Reduction of the degree of effect of failure: -1					Taking into account of the extent of the deviation as well as other factors Due to the small deviation in the determined values of thermal conductivity and thermal resistance, the extra energy consumption will be relatively low and only slightly increased costs arise Reduction of the degree of severity of the harm / damage: -1				
Final degree of effect of failure (in regard of the deviation):			3		Final degree of severity of the harm / damage (in regard of the deviation):			B	
Determination of the degree of risk									
Degree of the failure effect						Degree of severity of the harm / damage	Low risk		
1	2	3	4	5	6		F	Medium risk	
							E		
							D		
							C		
		X					B		
							A		
							High risk		
							Serious risk		
The construction product presents a					medium			risk.	

Guidelines for Risk Assessment of Harmonised Construction Products**IV. – Risk assessments in the event of a deviation between declared and actual performance****VIII Summary of several individual assessments**

If, due to multiple deviations identified during the technical assessment, it is necessary to perform several risk assessments, the results should be summarised in a separate step. It is necessary to examine whether the failure effects identified are independent of each other. If this is the case, the highest risk identified is considered the overall risk resulting from the construction product.

If the failure effects of the various deviations influence each other negatively, their combination should be assessed in a separate step, which will usually lead to a higher total risk.

A similar approach should be applied in the event that risk assessments have been performed for different secondary public interests.

The final conclusion for the construction product assessed should be recorded in a summarising document.

IX Recommendation – Review the risk assessment

Experience shows that, regardless of the method, different risk assessors take different experiences, scenarios or assumptions into account which might result in differing results of the risk assessment. Unfortunately, there is no perfect method which rules out every uncertainty. To rule out an assailable single opinion, one option is to involve more than only one risk assessor or even a group of experts to come to a reliable and resilient risk assessment. This is especially true for technically complex and new cases.

If the damage scenario and the kind of deviation already has been assessed in multiple risk assessments, it is also possible to rely on the experience from previous risk assessments.

Therefore, AdCo-CPR plans to build up a database with (anonymised) risk assessments performed by all participating members.

Guidelines for Risk Assessment of Harmonised Construction Products**IV. – Risk assessments in the event of a deviation between declared and actual performance****X Safety Gate notification and measures**

The main goal of the risk assessment is to determine whether the product presents a serious risk which results in a notification in the Safety Gate System (RAPEX) following Art. 19 of the MSCR.

If the risk assessment concludes that a high risk is associated with the construction product and thus the product presents a **serious risk within the meaning of Art. 19 Regulation (EU) 2019/1020 (MSCR)**, notification via the Safety Gate system (formerly RAPEX) pursuant to Art. 20 MSCR, is necessary provided that:

a) The Member State takes or intends to take a measure in accordance with Article 19 MSCR.

or

b) The economic operator has taken a voluntary measure with respect to a construction product that presents a serious risk and that was made available on the market.

and

The Member State considers that the reasons which prompted the measure or the effects of the measure go beyond its territory.

The market surveillance takes the risk assessed into account for determining necessary and appropriate measures. However, the level of risk determined does not automatically define the type of measure. Many other parameters, such as the number of products that have been placed on the market, the retractability of the product / batch, the particularities of the supply chain etc. have to be taken into account.

Note: The risk assessment does not take into account how many products have been sold – it determines the risk of a single product / a single 'order' for a construction work.

Guidelines for risk Assessment of harmonised Construction Products

V. – Risk assessments regarding a construction product that presents a risk for the fulfilment of the basic requirements for construction works, to the health or safety of persons or to other public interests all while being in conformity with the CPR requirements

E. Risk Assessments regarding a construction product that presents a risk for the fulfilment of the basic requirements for construction works, to the health or safety of persons or to other public interests all while being in conformity with the CPR requirements

Under development.