



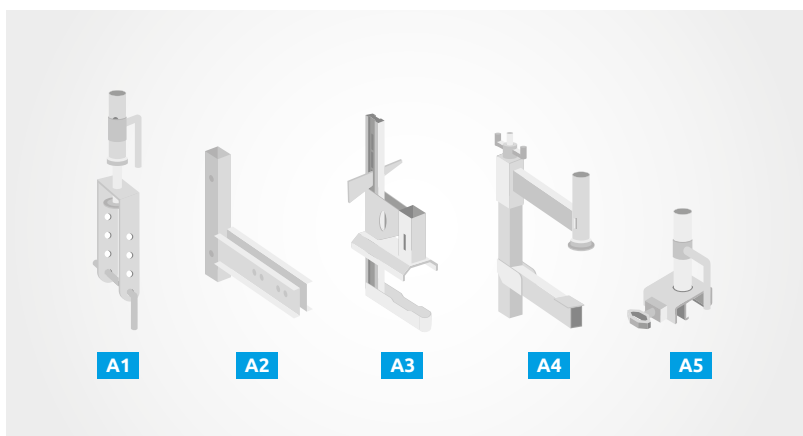
1.1 FLOORINGS

SCOPE | Collective protection measures for floorings with girders

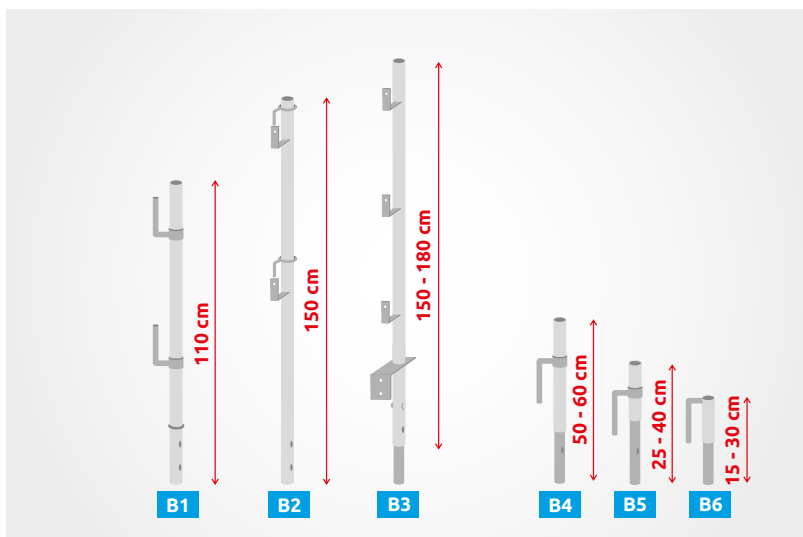
GENERAL RECOMMENDATIONS:

- Ensure the planned and adopted solutions are included in ISPW, which is an obligatory appendix to the HASP schedule.
- Provide an installation instruction from the manufacturer or a design of formworks supplier.
- Analyse whether the design includes measures for securing cantilevered girders.
- Plan systemic collective protection measures during construction of the flooring and after pouring concrete on it.
- Plan a correct sequence for moving collective protection measures after the concrete mix is poured.
- Plan collective protection measures in such way that their height and design fulfil their role also after concrete is poured on the flooring (at least 1.1 m) and class A strength according to PN-EN 13374.

FORMWORKS SETTING STAGE:



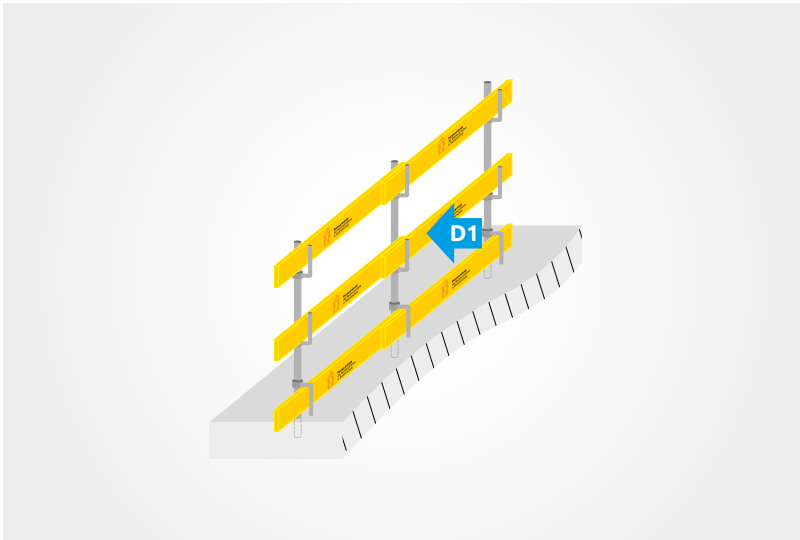
Plan appropriate girder holder. Each supplier of formworks and companies specialising in collective protection measures systems have appropriate solutions.



Use a post of appropriate height, so a top handrail of the barrier meets the minimum height, taking into account the flooring thickness or the peripheral beam height.

A solution with a post and a post extension of sufficient height can also be used.

Presented post extensions are examples, and their height can vary, depending on a supplier.



Protective planks for safety handrails and toeboards made of sawn timber of the following parameters:

- strength class at least C18,
- minimum moisture content 18%

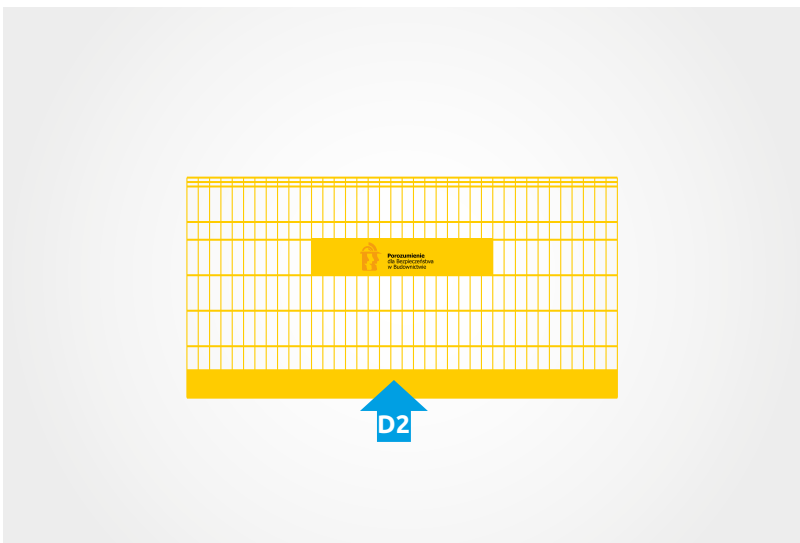
Plank dimensions:

Maximum length 2500 mm for a maximum distance between posts of 2000 mm

Thickness 32 mm

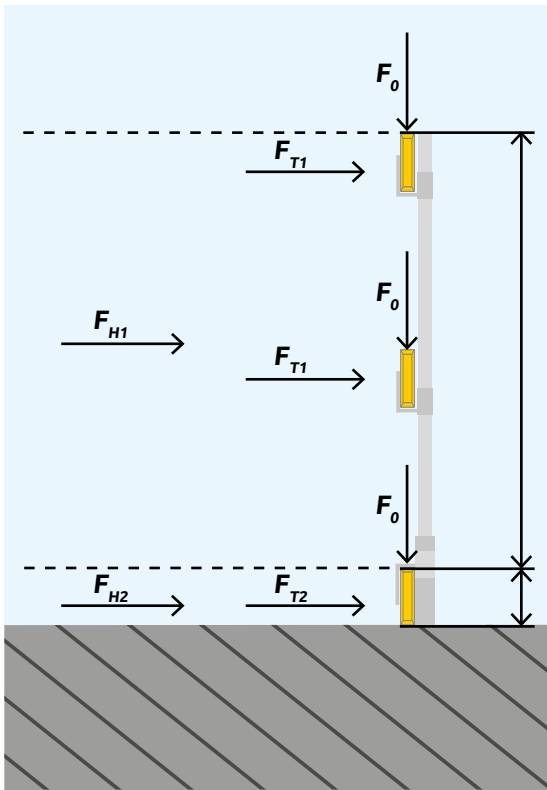
Width 150 mm,

Unless the instruction of a supplier of protective measures provides otherwise.



A safety mesh is used to protect against fall from height of people and tools and must meet the requirements of PN-EN 13374. Mesh used on the edge must have a tight toeboard (at least 15 cm).

Balustrades used to secure open edges of buildings and other construction structures. They should meet strength requirements specified in PN-EN 13374.



Key

F_0 - 1,25 kN

F_{T1} - 0,3 kN (maximum deformation of 55 mm)

F_{T2} - 0,2 kN (maximum deformation of 55 mm)

F_{H1} - 0,3 kN

F_{H2} - 0,3 kN

F_{T1} - A force applied to achieve conformance with requirements for deformation (for barriers, posts, perpendicularly to the system plane)

F_{T2} - A force applied to achieve conformance with requirements for deformation (for toeboard)

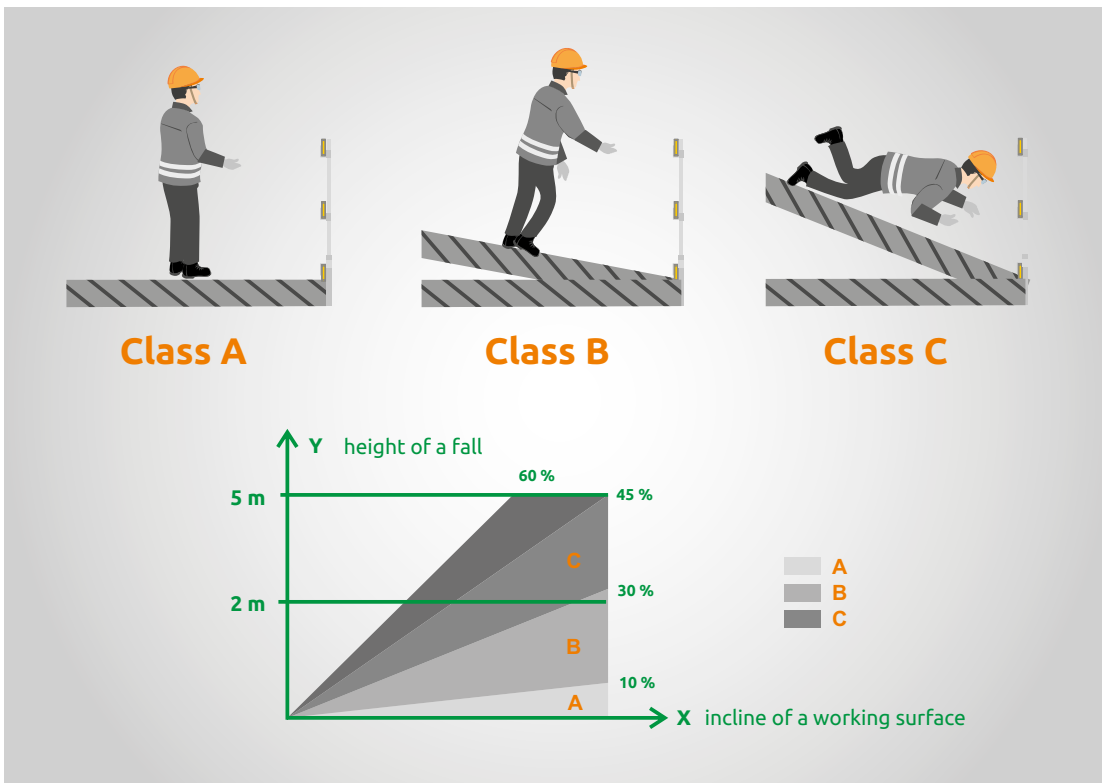
F_{H1} - A force applied to achieve conformance with requirements for strength (at any place, perpendicularly to the system plane, excluding toeboards)

F_{T2} - A force applied to achieve conformance with requirements for strength (for toeboard)

F_D - Random load

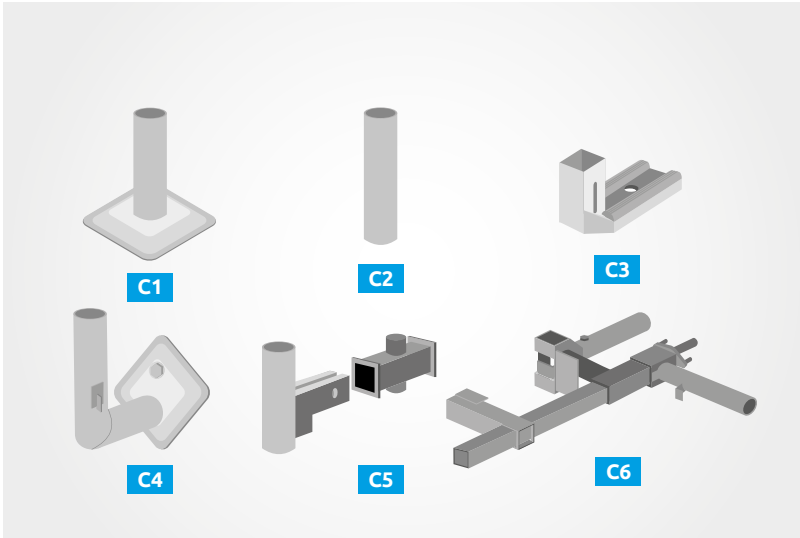
Values for loads that must be endured by collective protective measures, and a direction for their operation

A standard specifying requirements set up for balustrades also classifies collective protections and specifies possibilities for their application, taking into account the incline of the working surface



Adekwatność użytkowa poszczególnych klas dla różnych kątów nachylenia i wysokość upadku

STAGE AFTER CONCRETE POURING ON A FLOORING:



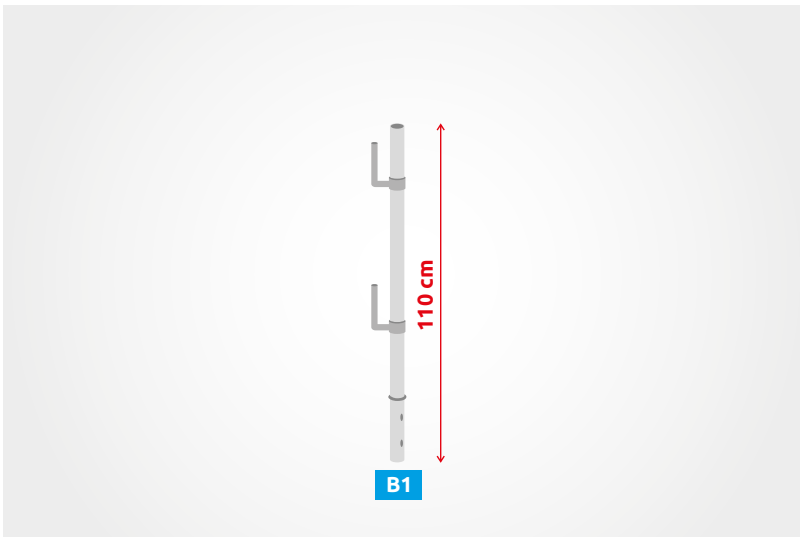
Plan a way for installation of a post after concrete is poured

Screwed on horizontal holder - using an appropriate anchor.

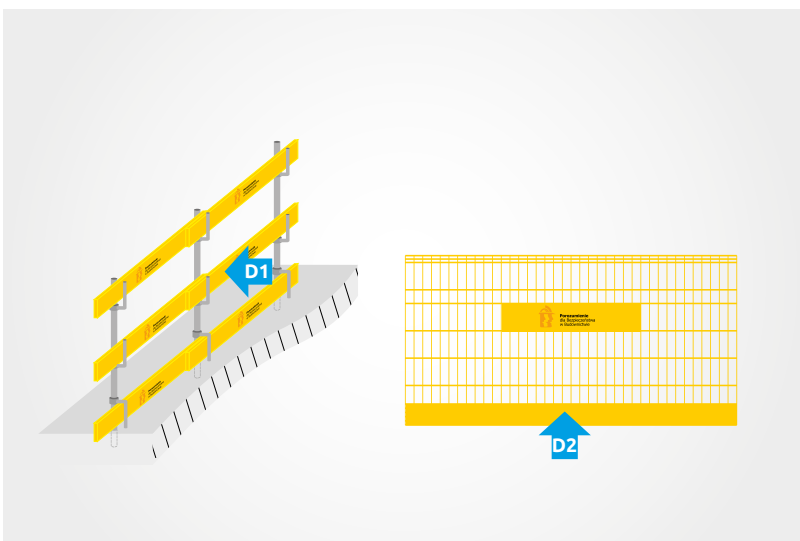
Stay-in-place system - assembled before concrete is poured

Screwed on vertical holder - using an appropriate anchor.

Clamping holder - screwed directly to reinforced concrete



A modular post for installation of a top handrail at a height of at least 1.1 m

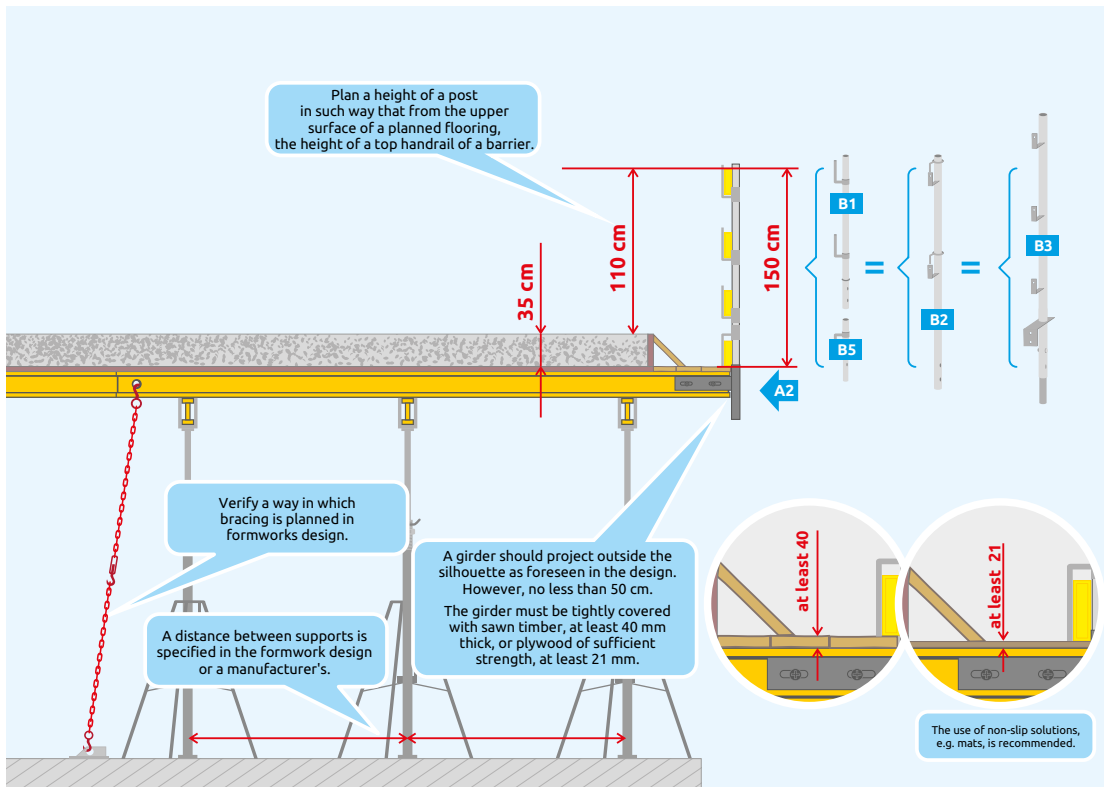


Protective planks should be of appropriate strength class, unless the instruction of a supplier of protective measures provides otherwise.

A safety mesh is used to protect against a fall from height of people and tools. Mesh used on the edge must have a tight toeboard (at least 15 cm).

Guidelines for securing a flooring without a peripheral beam.

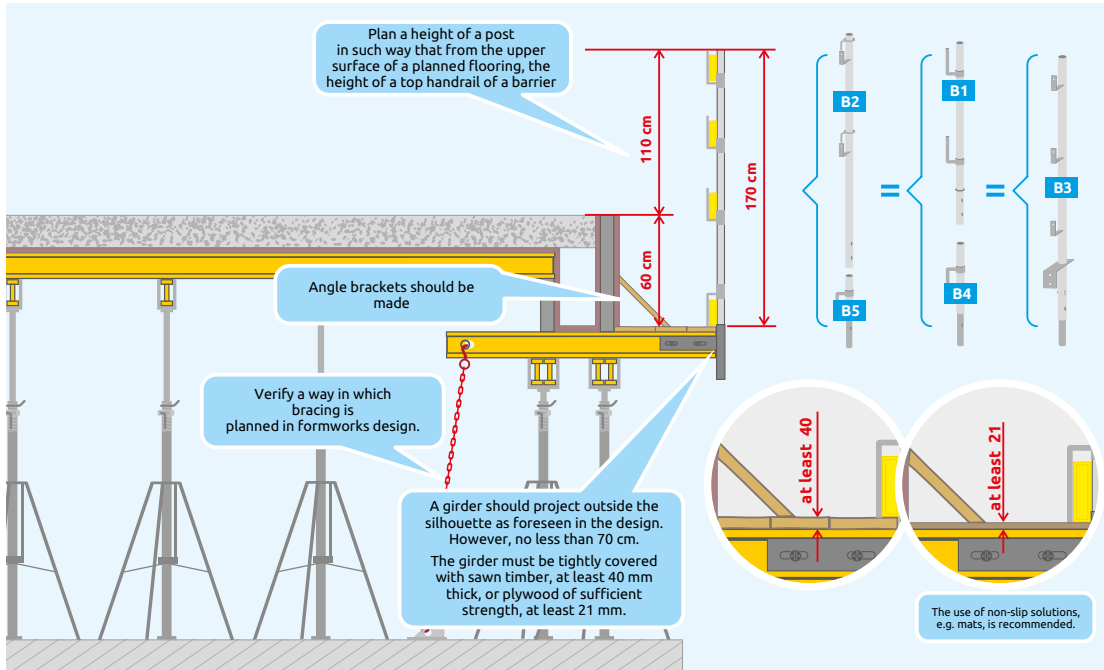
- Collective protection measures are constructed regularly, as works on construction of a flooring progress.



Requirements concerning operational load of a working platform must result from a manufacturer's instruction or an individual design.

The provided parameters are required at the works planning stage. A detailed solution must result from documentation of formworks supplier.

Guidelines for securing a flooring with a peripheral beam.

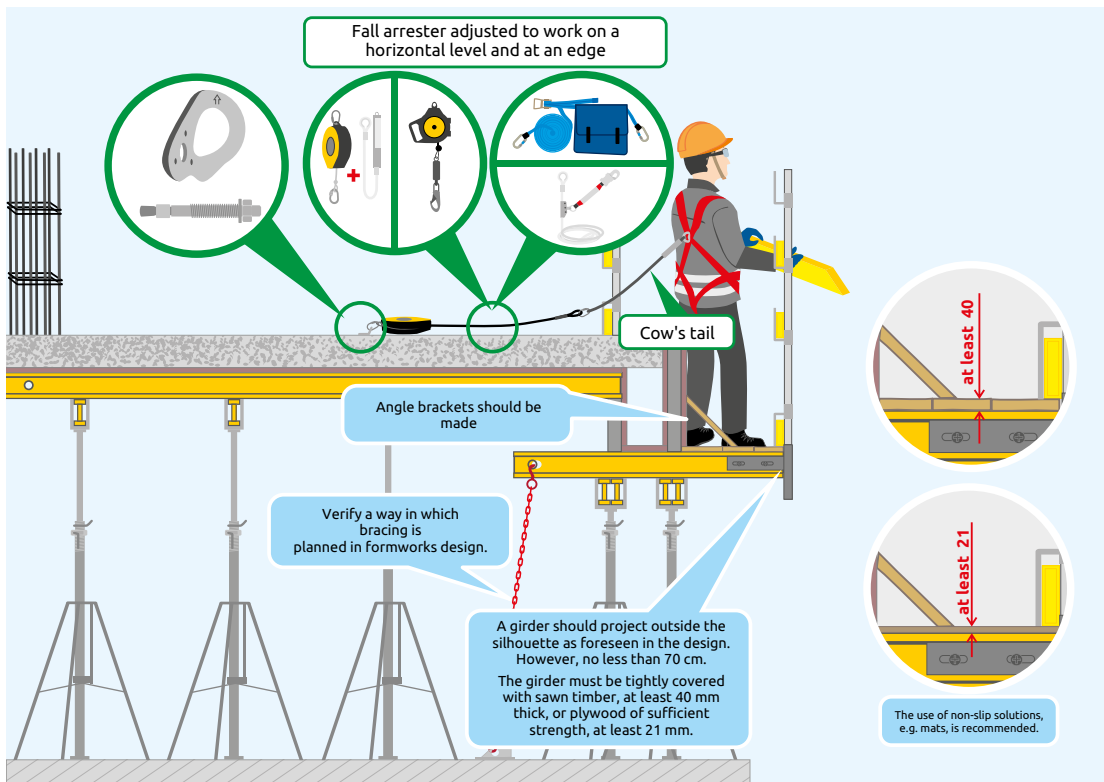


Requirements concerning operational load of a working platform must result from a manufacturer's instruction or an individual design.

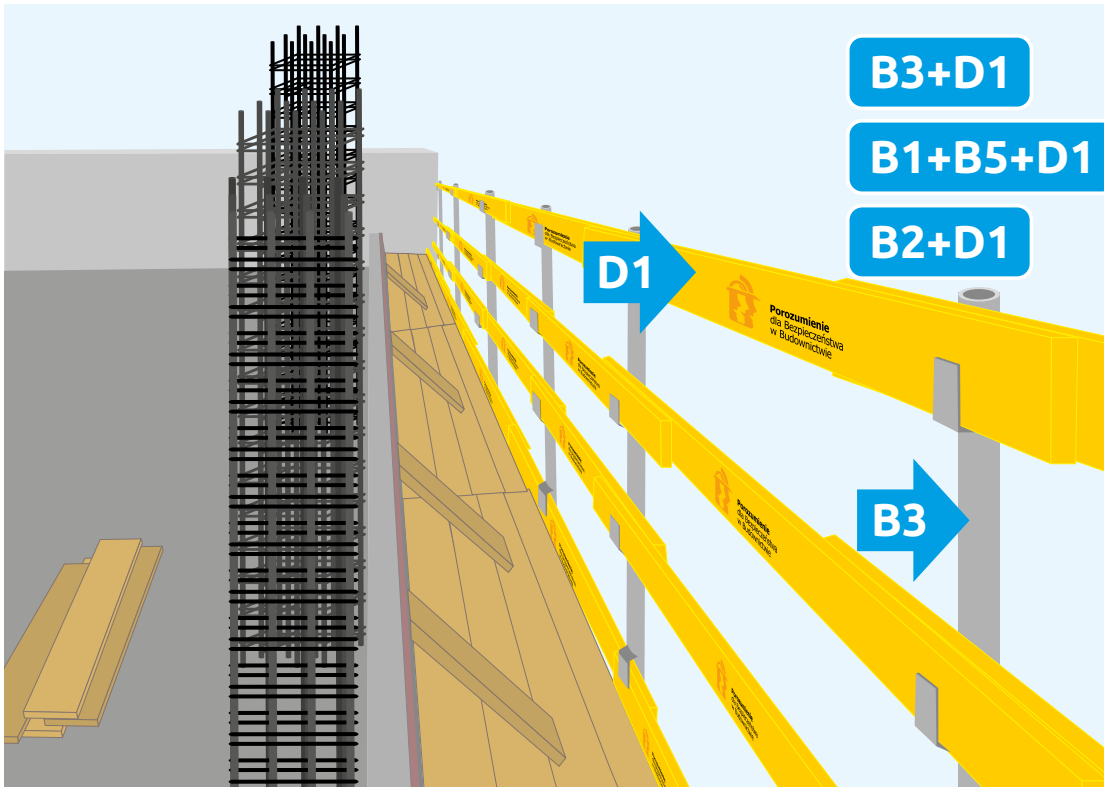
The provided parameters are required at the works planning stage. A detailed solution must result from documentation of formworks supplier.

Rules for planning a sequence for moving collective protection measures after the concrete mix is poured.

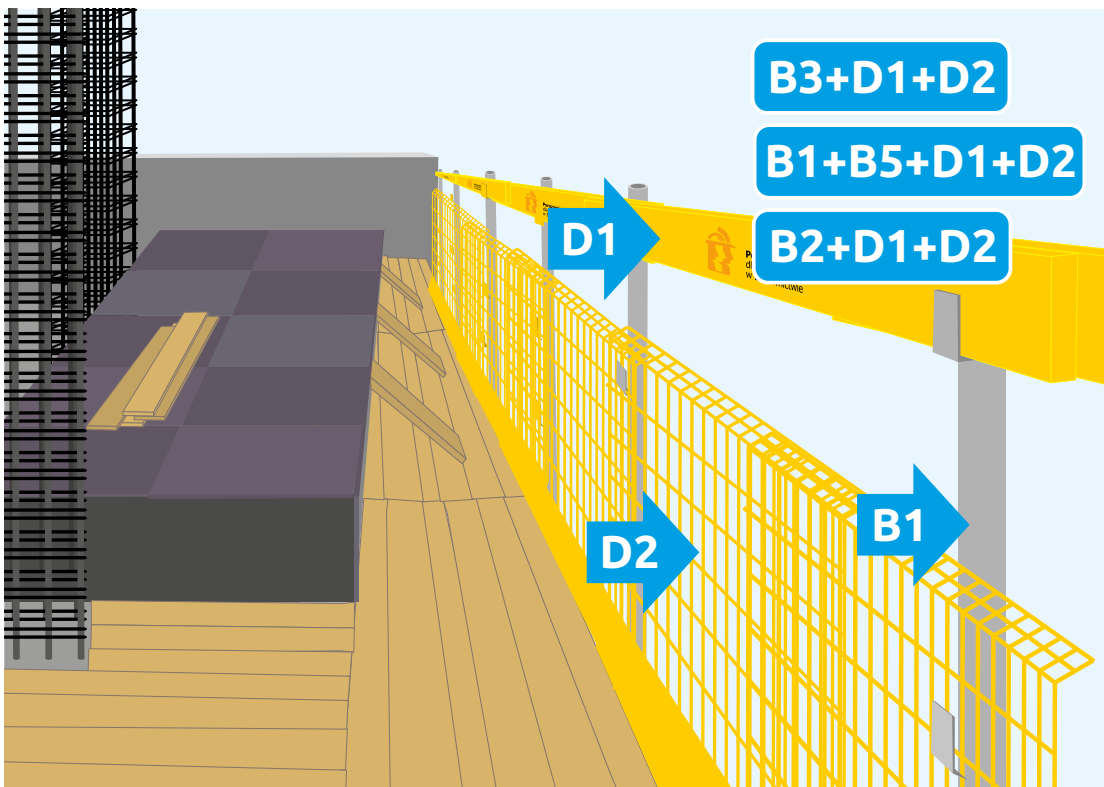
- First we construct collective protection measures on a flooring where concrete was poured, and only at the next stage the collective protection measures on girders are dismantled.
- Collective protection measures and anchoring points are installed on the flooring after concrete reaches appropriate strength.



Solution using 4 planks.



Solution with a mesh and a top plank.



Use of 110 cm high mesh and mesh installed above 60 cm.

