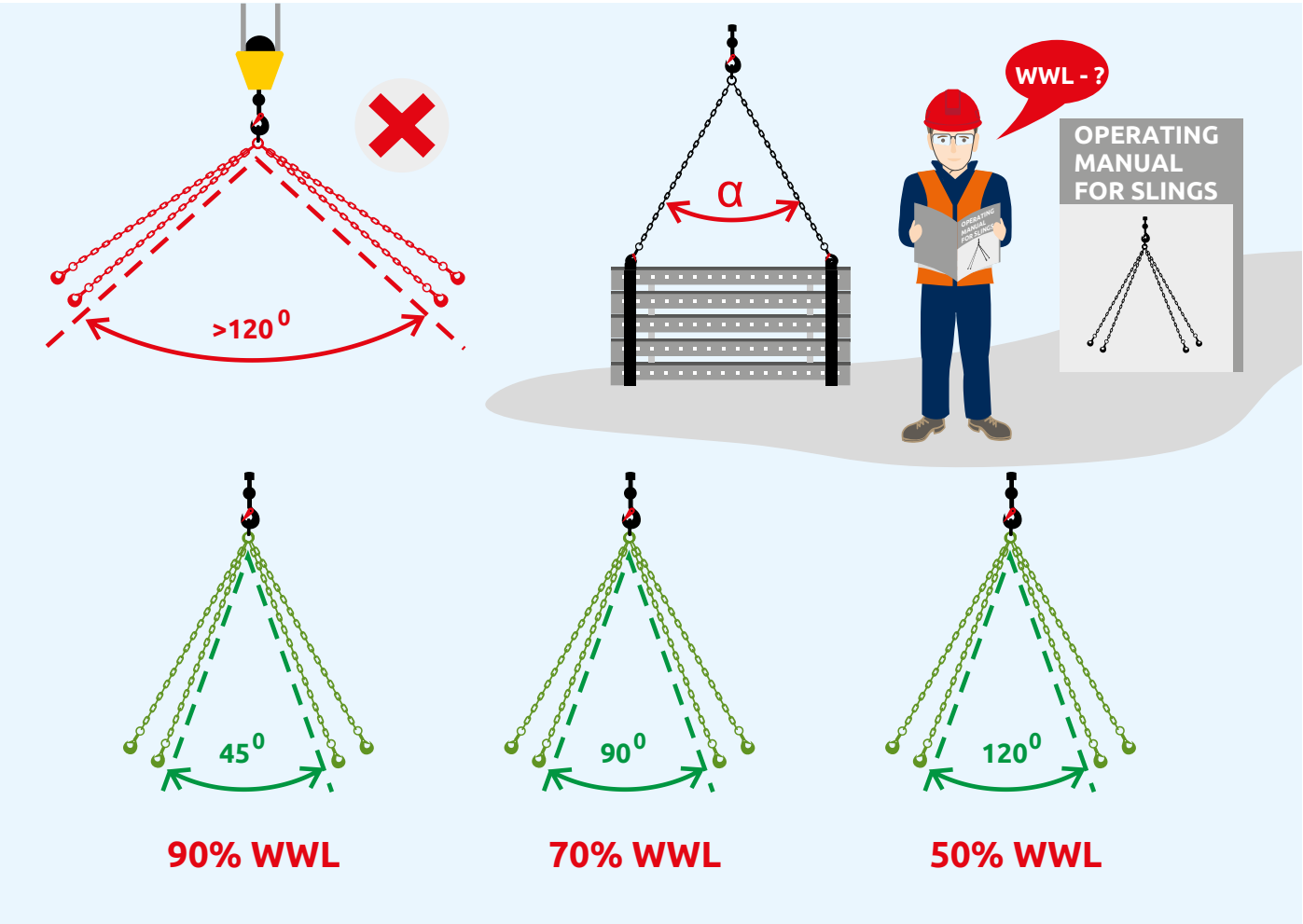
Porozumienie
dla Bezpieczeństwa
w Budownictwie

VERTICAL TRANSPORT

ver. 2 - 19.01.2022

VERTICAL TRANSPORT - SECURE LOAD FASTENING

The vertical transport of loads should be performed using certified slings. The working load limit is always provided on a metal plate/label attached to a sling or in a sling operating manual.



The working load limit for double- and multi-leg slings depends on a top angle value measured at a diagonal between legs, and amounts to:

- for an angle of 45° - 90%,
- for an angle of 90° - 70%,
- for an angle of 120° - 50%

of a working load limit for a sling in a vertical arrangement.

A maximum angle between sling legs cannot exceed 120°.

When a multi-leg sling is used, assume a condition of two operating legs to determine the working load limit.

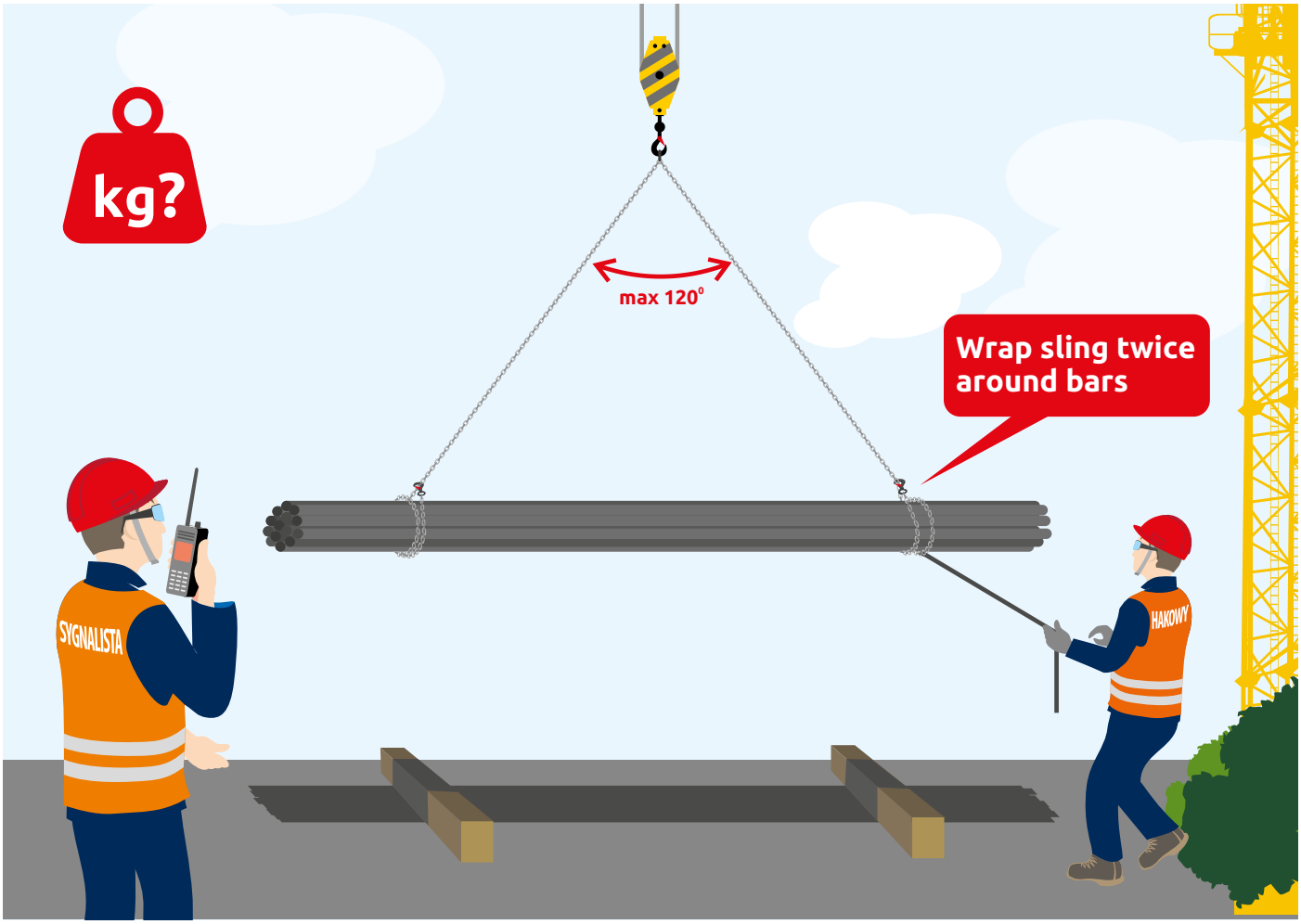
1. REINFORCEMENT TRANSPORT

BUNDLES OF STRAIGHT REINFORCEMENT BARS

An example weight of a bunch of straight reinforcement bars of a varying diameter - Ø*:

100 bars of Ø 12 = 1.10 tonnes
100 bars of Ø 16 = 1.90 tonnes
100 bars of Ø 20 = 2.95 tonnes

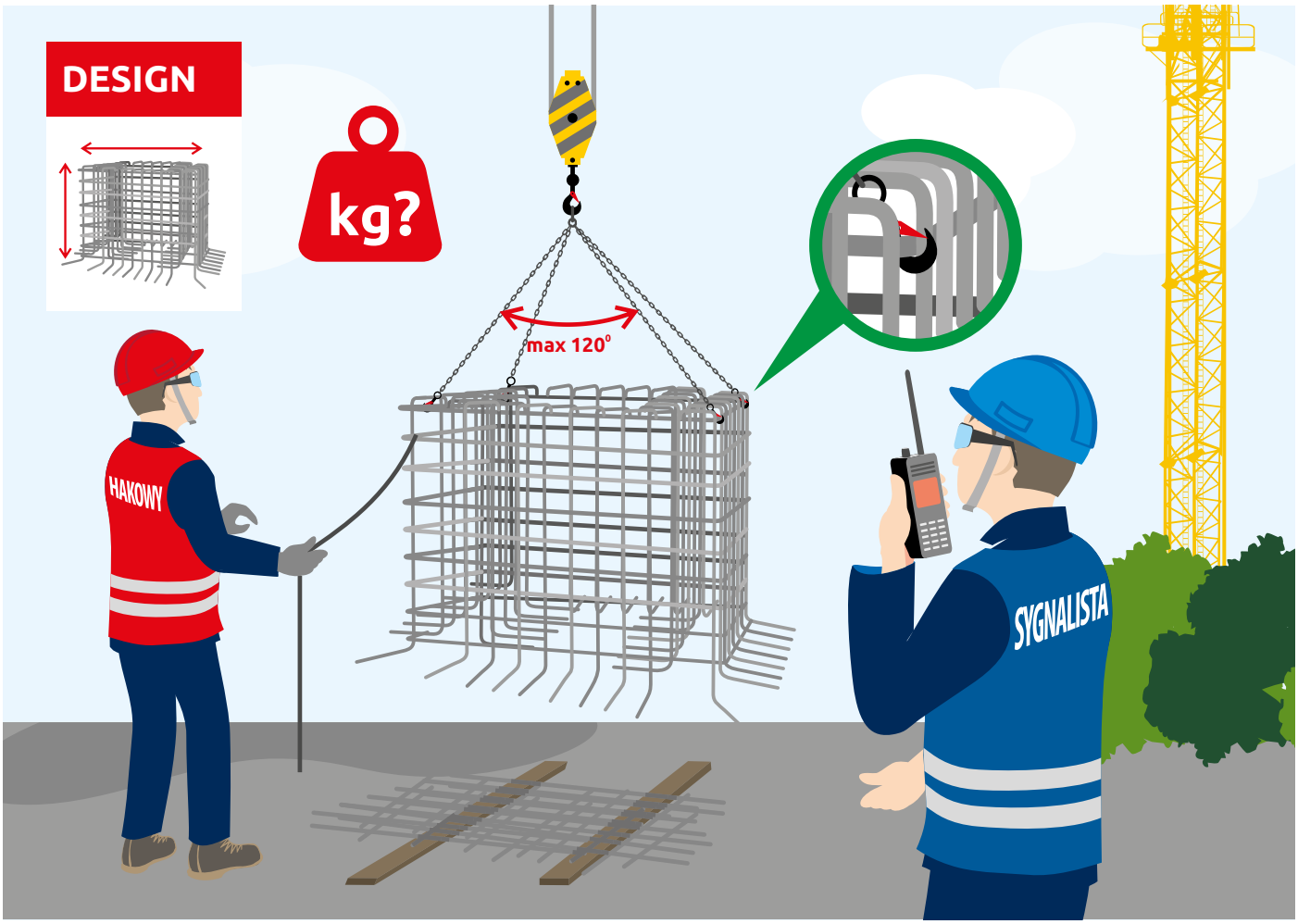
* weight specified for reinforcement bars of standard length of 12 m



- A suspended load where at least 2 rope slings are used, attached to a hook of a device for vertical transport.
- A load should be wrapped twice or choker slings should be used, attached at an equal (1/3) distance from a bars end on both sides.
- Maintain an acceptable angle between slings, evaluate a weight of a steel bundle.
- Use pads for storage and safe disconnecting of slings.
- **It is forbidden to attach slings to wires binding a bundle.**
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

PREFABRICATED ELEMENTS OF FOUNDATIONS AND WALLS REINFORCEMENT SYSTEMS

Check the weight in a reinforcement design or a delivery specification.

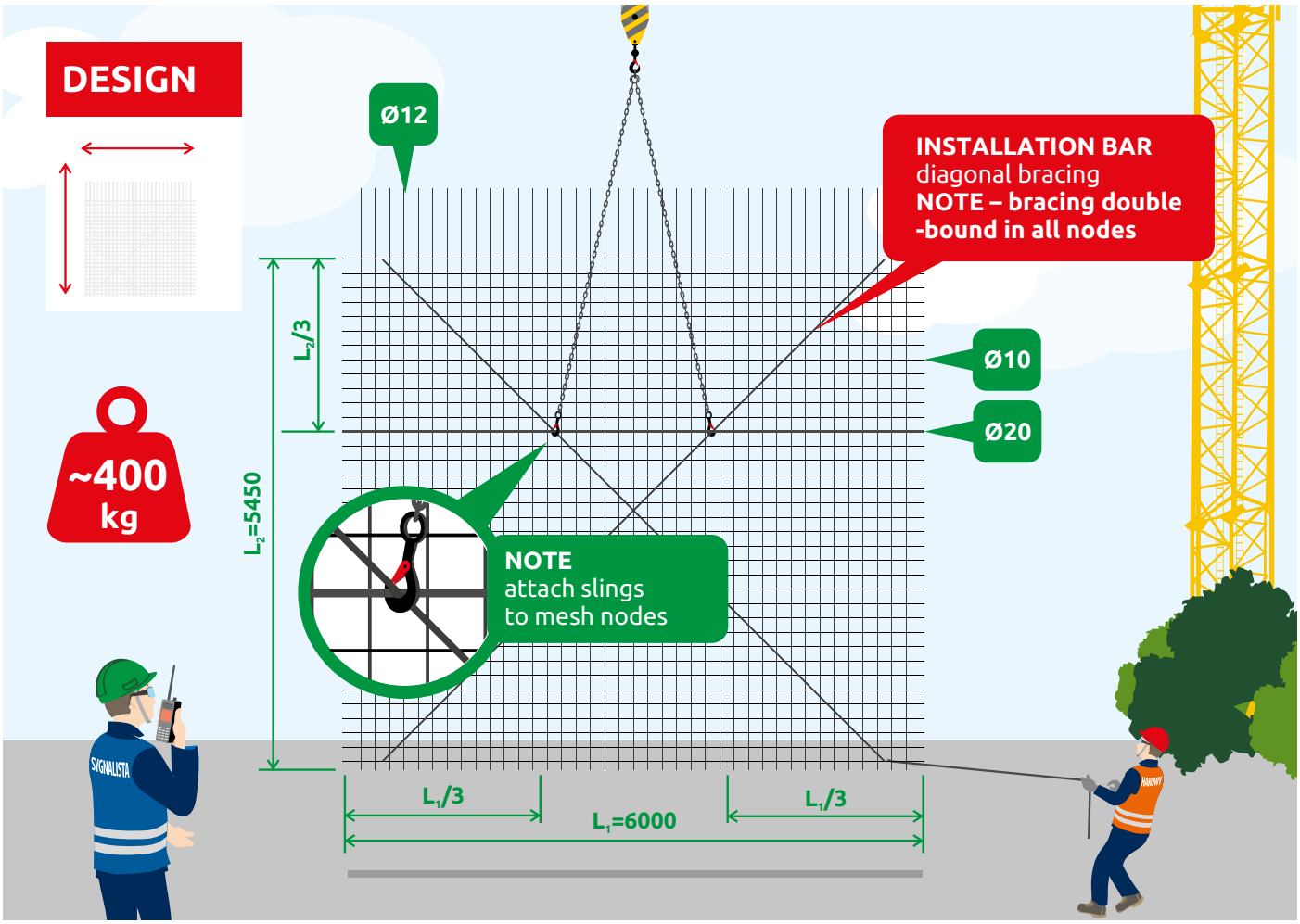


Conduct transport in accordance with the reinforcement design or designer's guidelines, specifying sling attachment points.

- Attach a load to a four-leg chain sling with hooks.
- Hooks should be attached to structural components (not stirrups).
- Maintain a safe angle between slings, not exceeding 120°.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

PREFABRICATED ELEMENTS OF WALLS REINFORCEMENT, REINFORCEMENT STEEL MESHES

The element weight should be determined on a basis of the reinforcement design or a delivery specification.

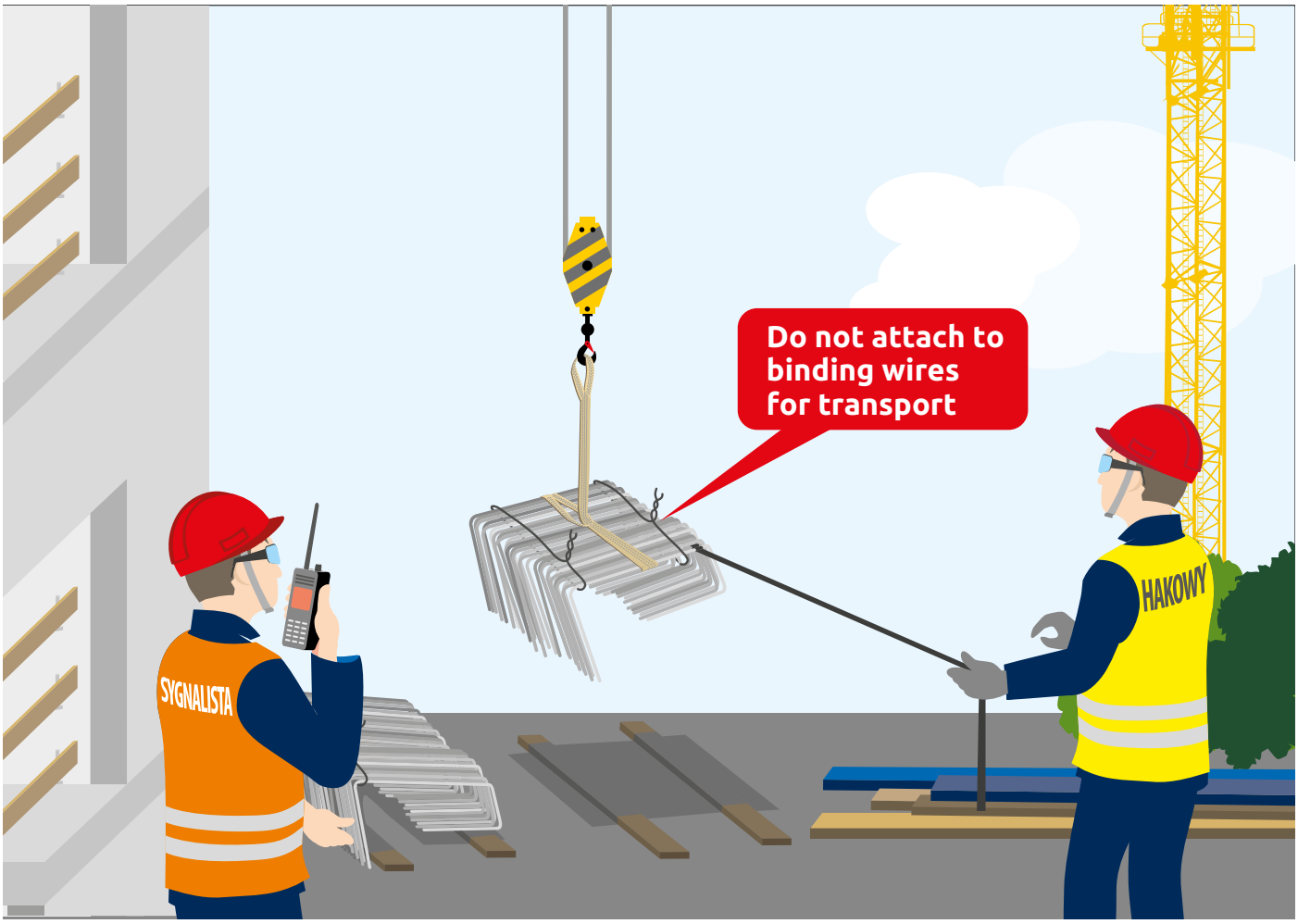


Conduct transport in accordance with the design or designer's guidelines, specifying a way for attaching the mesh.

- Load attached to a double-leg chain sling.
- Attach sling hooks to mesh nodes at 1/3 length from its edge, both horizontally and vertically.
- A mesh must be provided with bracing in form of a diagonal installation rod, double-tied in all nodes.
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- During a trial lift, evaluate location of a centre of gravity, and when necessary, adjust attachment after lowering the load.
- **It is forbidden for people to be under a transported load.**

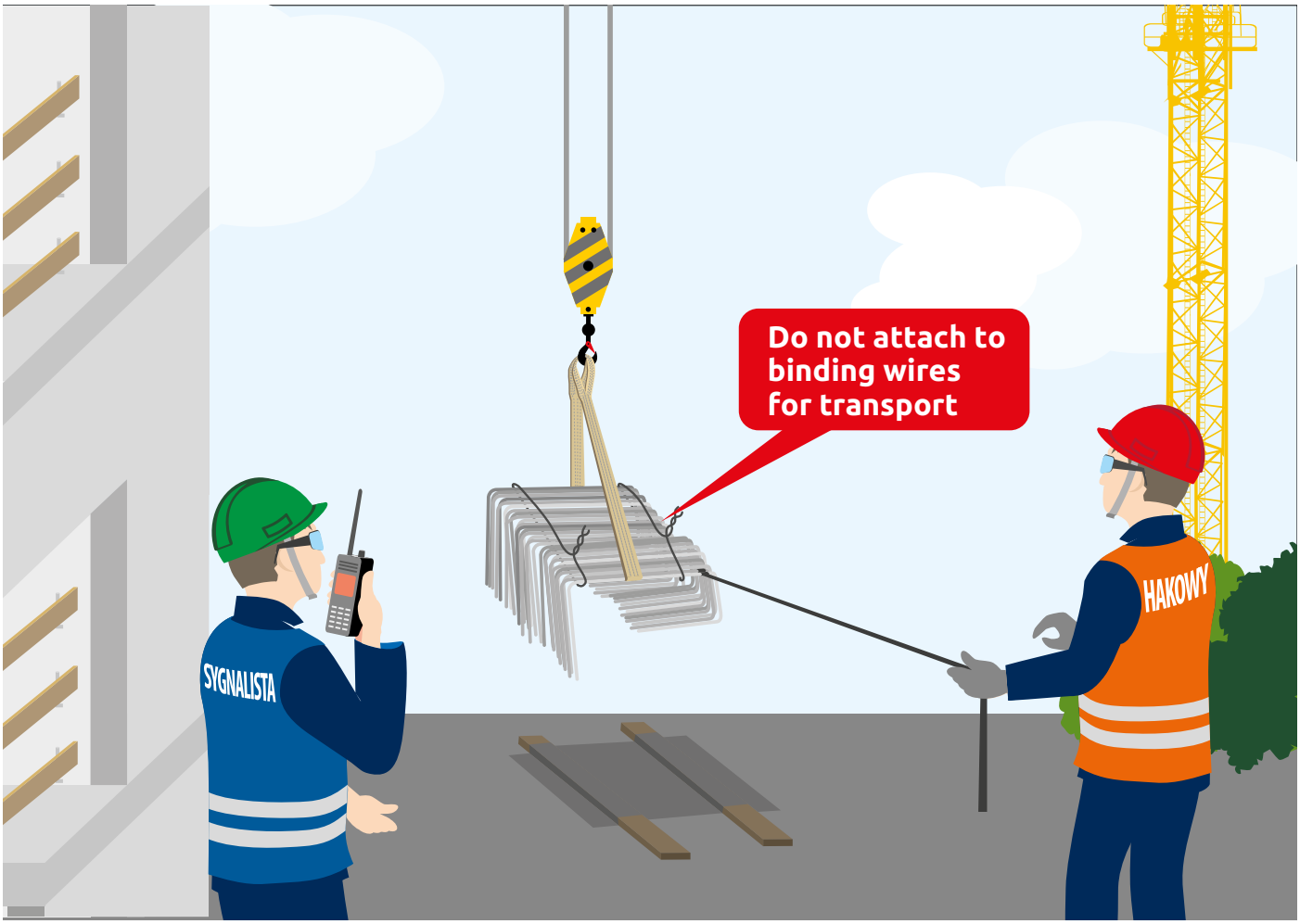
BUNCHES OF READY-TO-USE REINFORCEMENT STIRRUPS OR CUT AND BEND BARS

Check the weight in a reinforcement design or a delivery specification.



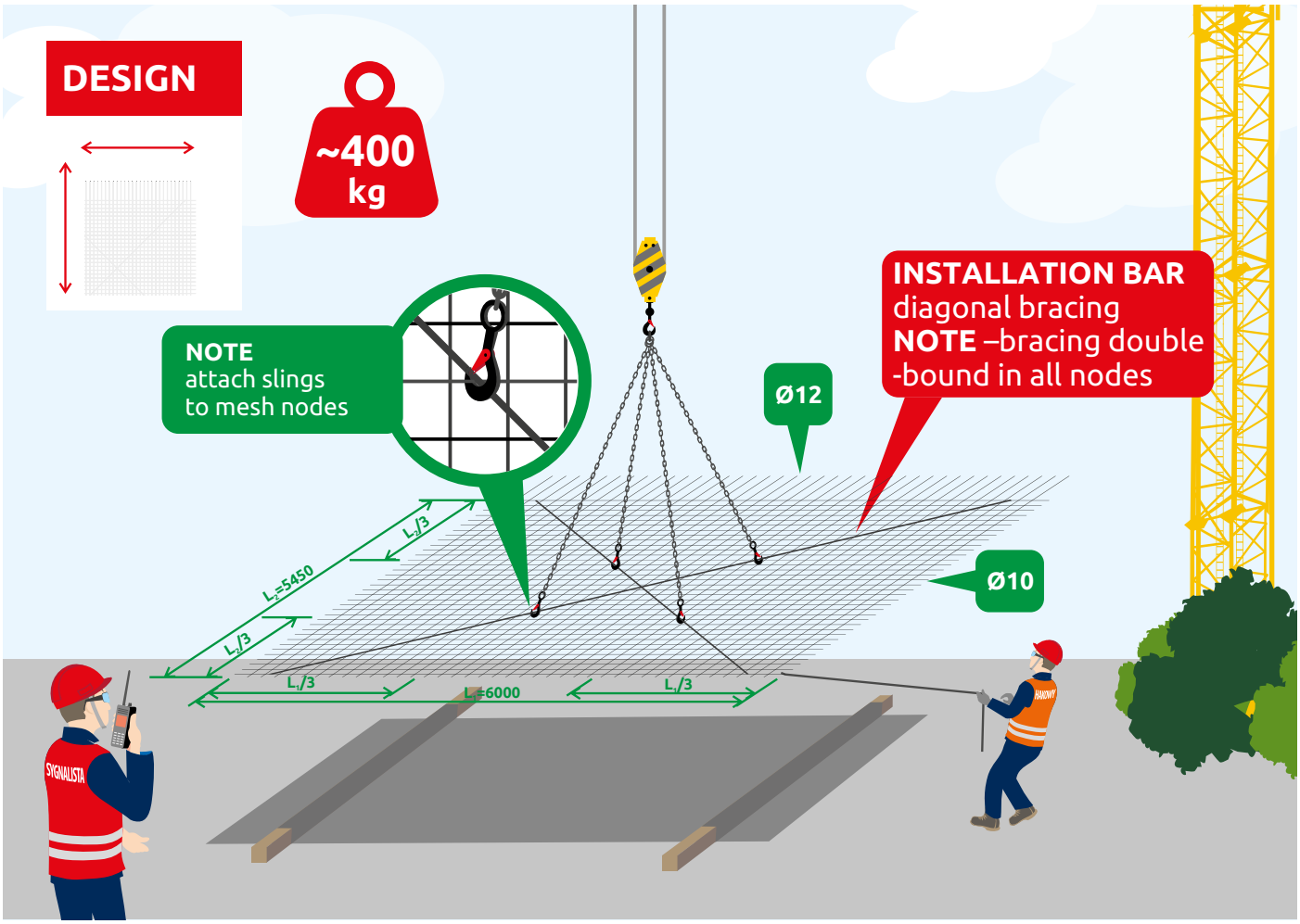
- Use a rope sling for transport.
- Wrap elements with a sling twice or use choker slings.
- **It is forbidden to attach slings for transport to wires binding a bundle.**
- Use pads for storage of reinforcement and safe disconnecting of the load.
- When choker slings cannot be used, use a U-shaped clamp (only for closed reinforcement forms that cannot slip down from the sling). Apply other rules as described above.
- Estimate the load weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

BUNCHES OF READY-TO-USE REINFORCEMENT STIRRUPS OR CUT AND BEND BARS



PREFABRICATED REINFORCEMENT ELEMENTS: FLOORING MESHES

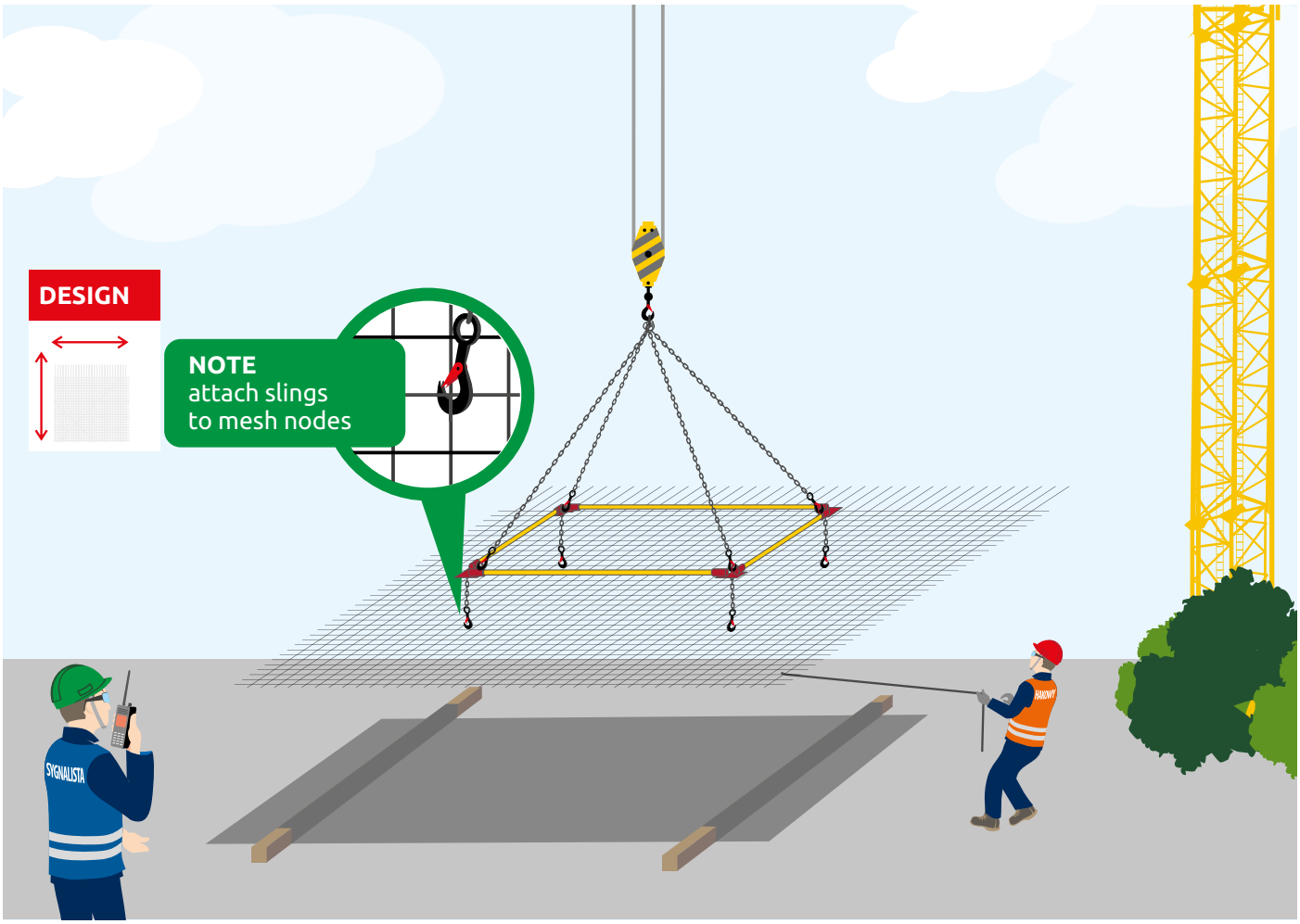
The element weight should be determined on a basis of the reinforcement design or a delivery specification.



Conduct transport in accordance with the design or designer's guidelines, specifying points for attaching the mesh.

- Load attached to a 4-leg chain sling.
- Attach sling hooks to mesh nodes at 1/3 length from its edge (both the length and the width of the element).
- A mesh must be provided with bracing in form of a diagonal installation rod, double-tied in all nodes.
- Estimate the load weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- During a trial lift, evaluate location of a centre of gravity, and when necessary, adjust attachment after lowering the load.
- **It is forbidden for people to be under a transported load.**

PREFABRICATED REINFORCEMENT ELEMENTS: FLOORING MESHES



- Alternately, use a beam. Attach a flooring mesh to the beam at its bottom bars.

PREFABRICATED ELEMENTS OF REINFORCEMENT SYSTEMS FOR PILES AND BEAMS

The element weight should be determined on a basis of the reinforcement design or a delivery specification.

Conduct transport in accordance with the design or designer's guidelines, specifying points for attaching the element.

- Load attached to a 4-leg chain sling.
- Hooks should be attached to structural components of the reinforcement, securing the load against falling when the binding wire breaks, at 2/3 of the element height.
- Estimate the load weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

STEEL “I” BEAMS

An example weight of HEB beams:

HEB 100 = ca. 20 kg/rm
HEB 120 = ca. 27 kg/rm
HEB 140 = ca. 34 kg/rm
HEB 160 = ca. 43 kg/rm
HEB 180 = ca. 51 kg/rm
HEB 200 = ca. 62 kg/rm

- Use a clamp for steel I beams in accordance with a manufacturer’s operating manual, attached to a double-leg chain sling.
- Alternately, use belt slings wrapped twice around the load (the sling must be secured against wear/cut at the load edge).
- Maintain an acceptable angle between slings, not exceeding 120°.
- Assess the element weight in relation to parameters of clamps specified in a manufacturer’s operating manual.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
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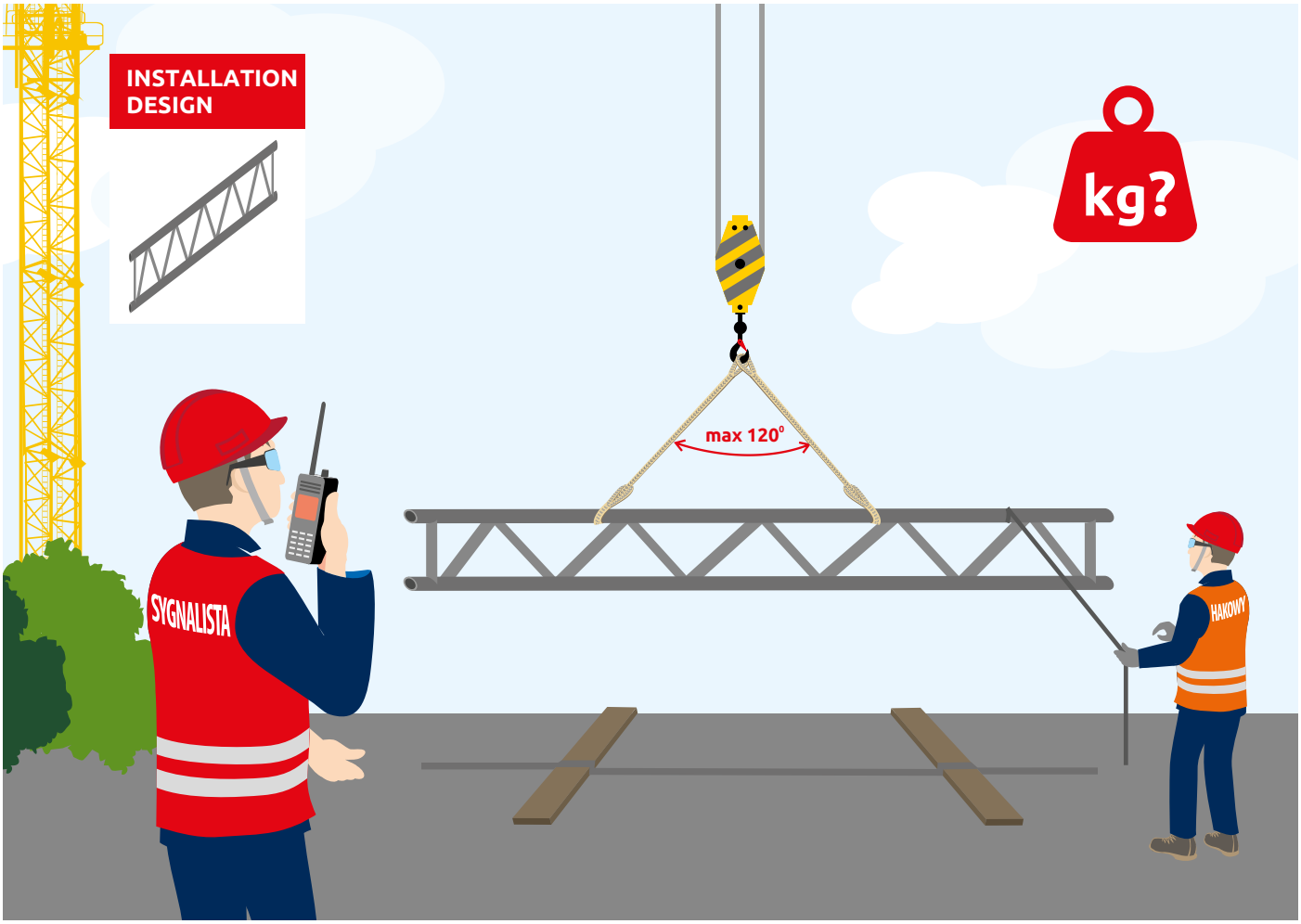
STEEL TRUSSES

The weight should be determined on a basis of the installation design or a delivery specification.



Conduct transport in accordance with the installation design that may contain additional guidelines.

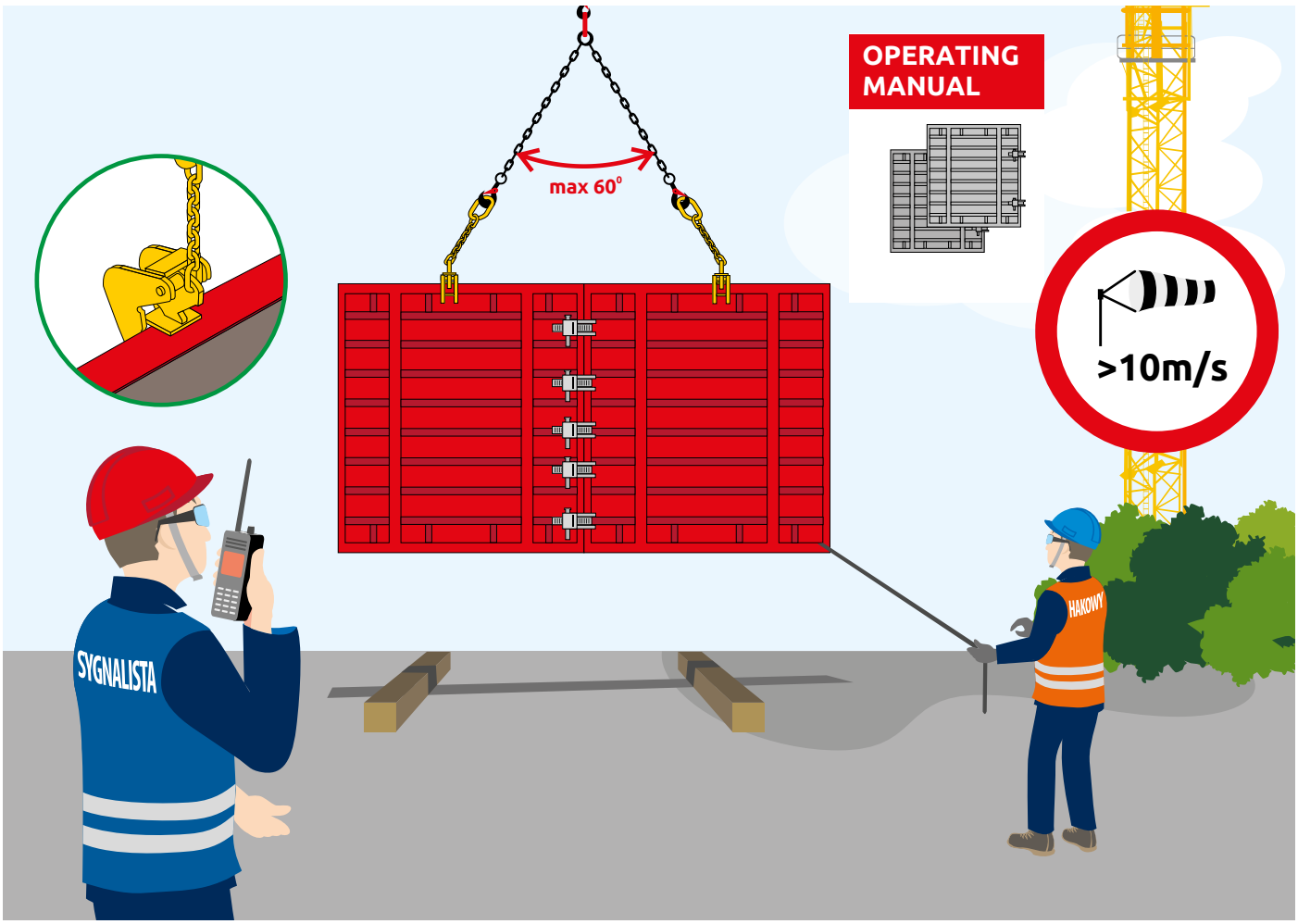
- Lift a truss on two choker belt slings.
- Maintain an acceptable angle between slings, not exceeding 120°.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and verify if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

2. TRANSPORT OF FORMWORK COMPONENTS

WALL FORMWORK PANELS

An example weight of formwork panels:

240x330 = ca. 440 kg
240x270 = ca. 360 kg
240x150 = ca. 215 kg
270 x 75 = ca. 107 kg



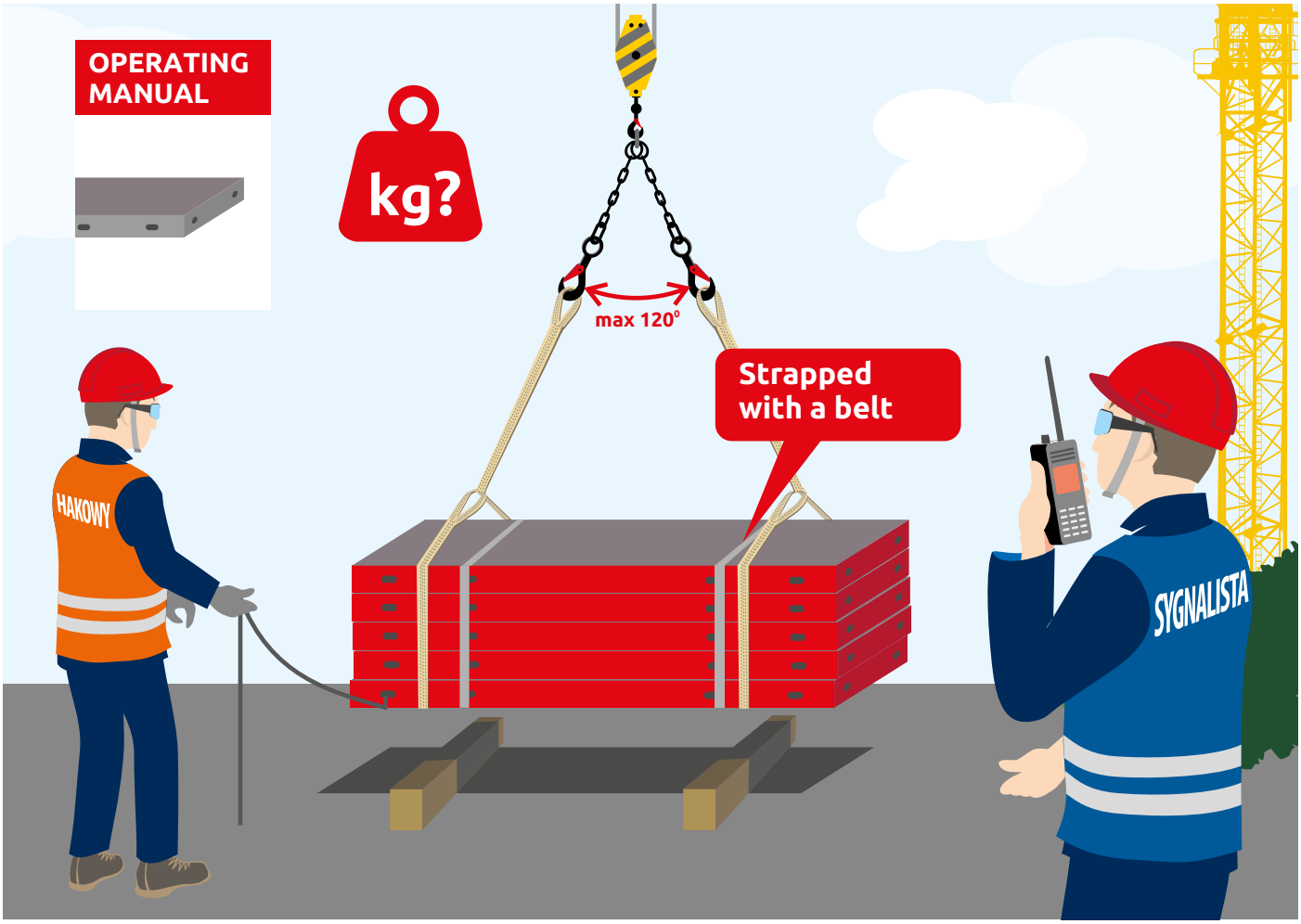
Transport should be conducted in accordance with a manufacturer's operating manual.

- Use only transport clamps dedicated to a given formwork system
- in accordance with a manufacturer's operating manual, and they should be attached directly to chain sling legs.
- These clamps should be used in pairs.
- When composite slabs are transported, they should be connected with locks, in accordance with a manufacturer's operating manual.
- Ensure that an acceptable angle between slings, not exceeding 60° is maintained and check the wind strength.
- Estimate the load weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

SET OF FORMWORK PANELS

An example weight of formwork panels:

240x330 = ca. 440 kg
240x270 = ca. 360 kg
240x150 = ca. 215 kg
270 x 75 = ca. 107 kg



Transport should be conducted in accordance with a manufacturer's operating manual.

- Use choker belt slings wrapped around the load.
- Fasten assembled slabs with a belt.
- Maintain an acceptable angle between sling legs, not exceeding 120°.
- Do not transport more than 5 slabs together.
- Additionally, plastic plugs inserted in slab or bracing openings, passing through all slabs and ending with a nut, can be used.
- When stanchions are used, follow rules specified in an operating manual of a manufacturer of stanchions, attach hooks of a 4-leg chain sling to stanchion lugs.
- Adapt the weight of transported panels to the load bearing capacity of stanchions.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

SMALL COMPONENTS, FORMWORK ACCESSORIES

An example weight:

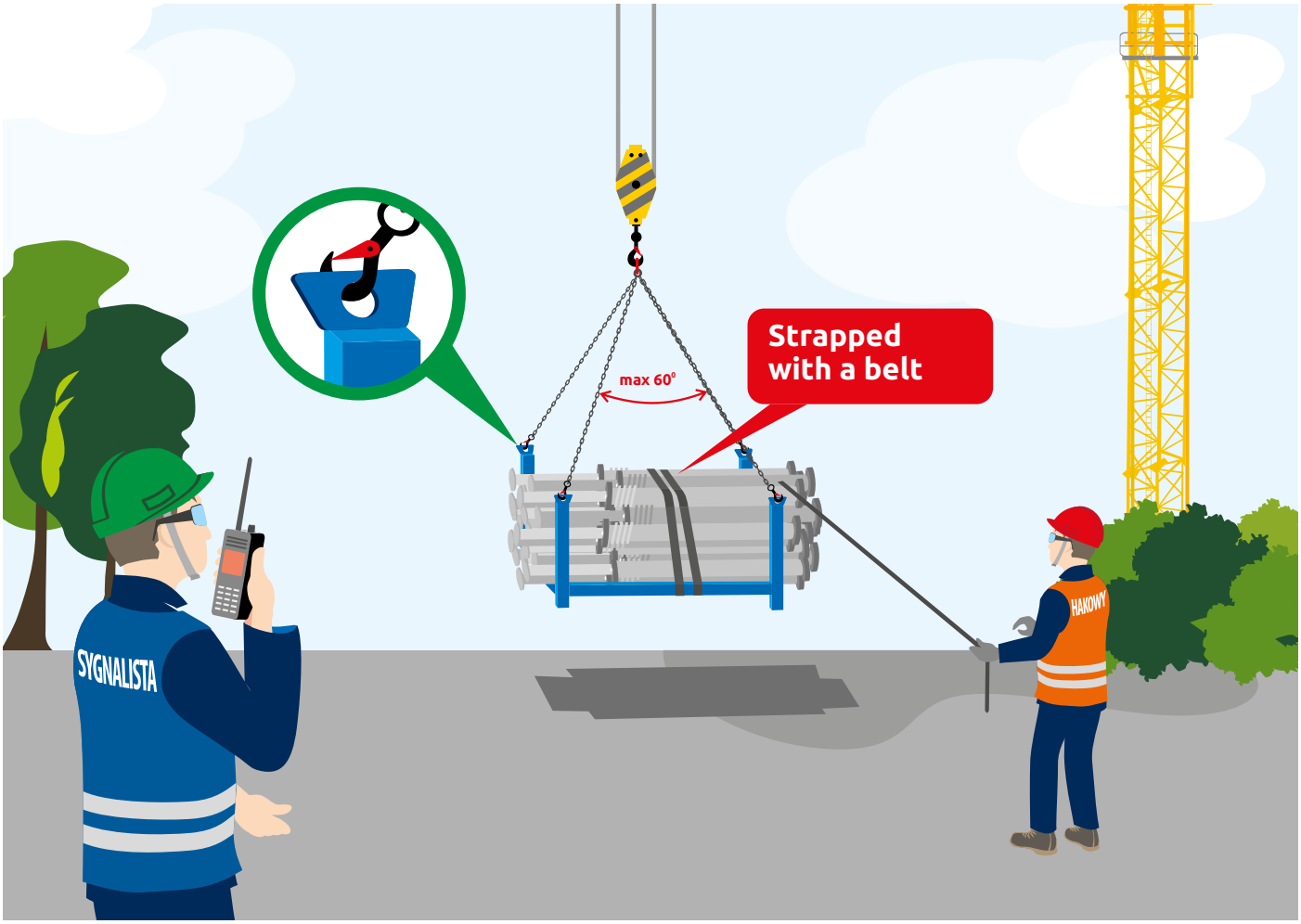
1 girt 80 PR = 10 kg
1 lock Z-5PR = 3.5 kg
1 bracing nut = 1.8 kg
Transport basket = 90 kg

- Use baskets for accessories, with of a net mesh size selected accordingly, so small items cannot fall out through them.
- Attach the basket in 4 corners (eyes) with a chain sling. Attach hooks from the inside of the basket (a hook catch facing outside).
- Observe the acceptable loading of baskets.
- Secure loose load that can fall out from the basket by covering it with a net or tarpaulin.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

FORMWORK ELEMENTS (PILLARS, BEARING POSTS, BUTTRESSES) ON BLOCK PALLETS OR STANCHIONS

An example weight of a vertical support:

1 300–520 PR = 36 kg
1 185-320 PR = 18 kg
1 125-200 PR = 13 kg



- Use chain slings attached at 4 corners (eyes) at the pallet posts (stanchions for bearing posts).
- Elements placed on a block pallet should be additionally fastened to the pallet a transport belt.
- When stanchions are used, follow rules specified in an operating manual of a manufacturer of stanchions.
- Adapt the weight of transported elements to the load bearing capacity of stanchions.
- Maintain the acceptable opening angle of the sling cables.
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

SINGLE FORMWORK PANELS

An example weight of formwork panels:

240x330 = ca. 440 kg
240x270 = ca. 360 kg
240x150 = ca. 215 kg
270 x 75 = ca. 107 kg

Conduct transport in accordance with a manufacturer's operating manual.

- Use transport clamps dedicated to a given formwork system in accordance with a manufacturer's operating manual, and they should be attached directly to chain sling legs.
- These clamps should be used in pairs.
- Note the wind strength.
- Estimate the load weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

MOBILE BRACKETS, WORKING PLATFORMS

An example weight of formwork panels:

Weight = ca. 300 kg

Transport and installation of clamps for platforms should be done in accordance with ISPW for carpentry and reinforce concrete works, and with an operating manual or a design for formworks.

- Use 4-leg slings attached to transport clamps embedded in the planking.
- During assembling and disassembling, use personal protection equipment for works at height, attached to an anchoring point.
- When assembling and/or disassembling from the side of the constructed structure, use mobile platforms.
- When a platform is placed on clamps, they should immediately be secured with pins.
- It is forbidden to stay on a platform during transport.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
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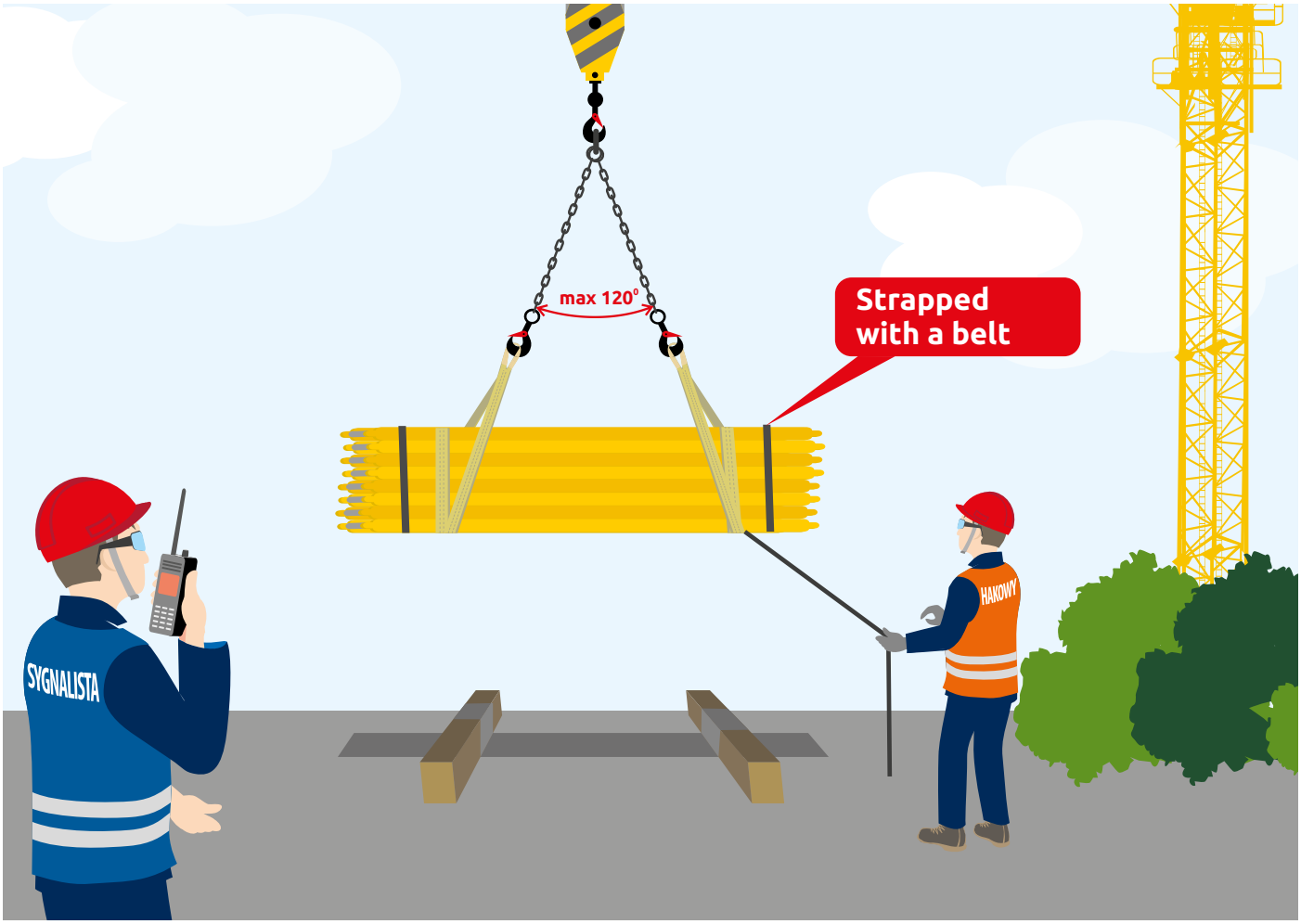
CROSSBEAMS

An example weight:

Crossbeam H 20 = 5 kg/rm

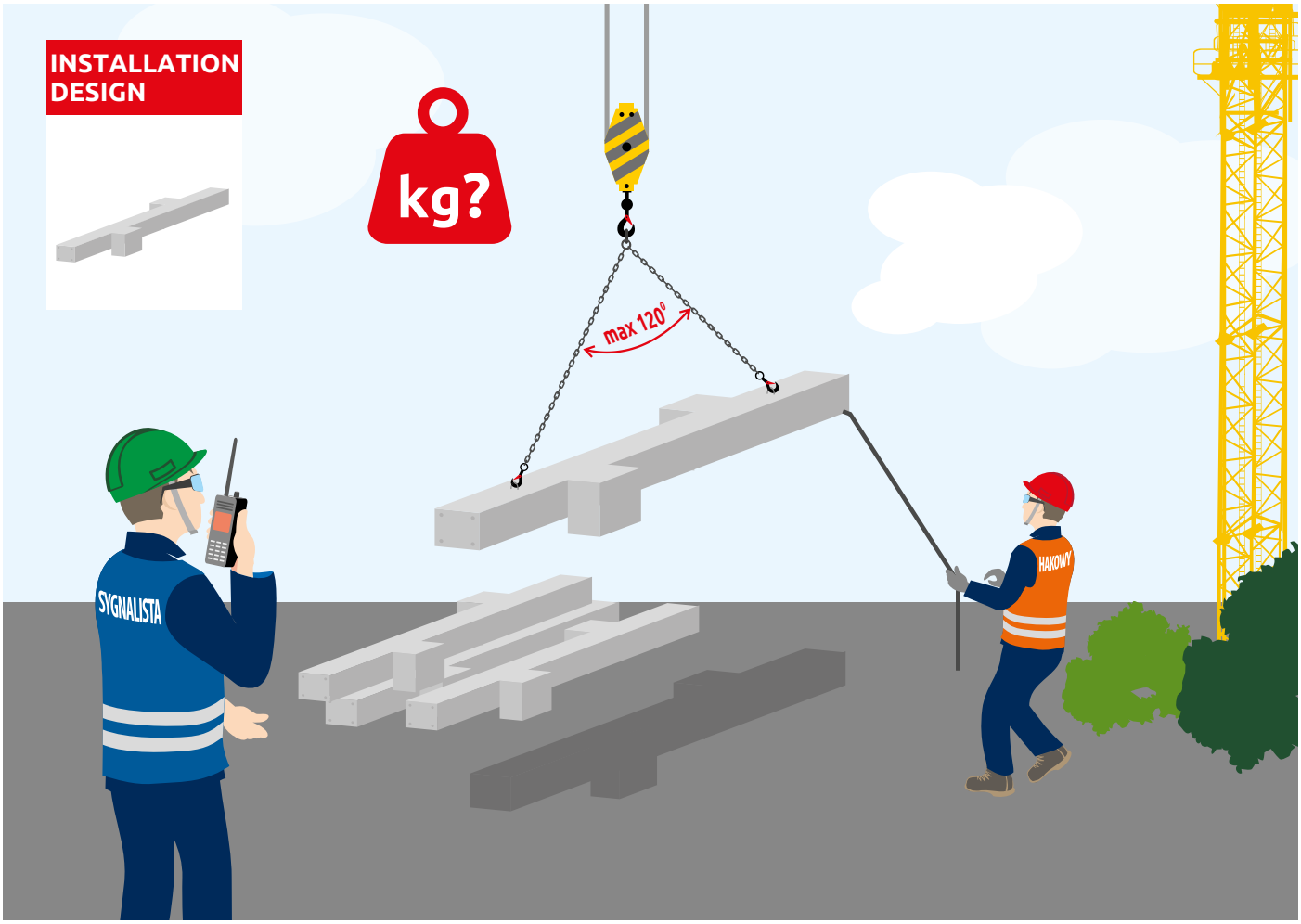


- Before transport, crossbeams should be fastened with tape, then use two belt slings wrapped twice around the load or of a choker type fastened at 1/4 of the beam length from the edges, and attached to a chain sling.
- Maintain an acceptable angle between sling legs, not exceeding 120°, and level the load.
- Estimate the load weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

3. TRANSPORT OF PREFABRICATED REINFORCED CONCRETE ELEMENTS

PREFABRICATED REINFORCED CONCRETE PILES, REINFORCED CONCRETE ELEMENTS

The weight of 1 m^3 of a reinforced concrete element = ca. 2.5 tonnes.



Conduct transport in accordance with the installation design or guidelines of a component manufacturer. During the transport of prefabricated reinforced concrete piles, ensure that:

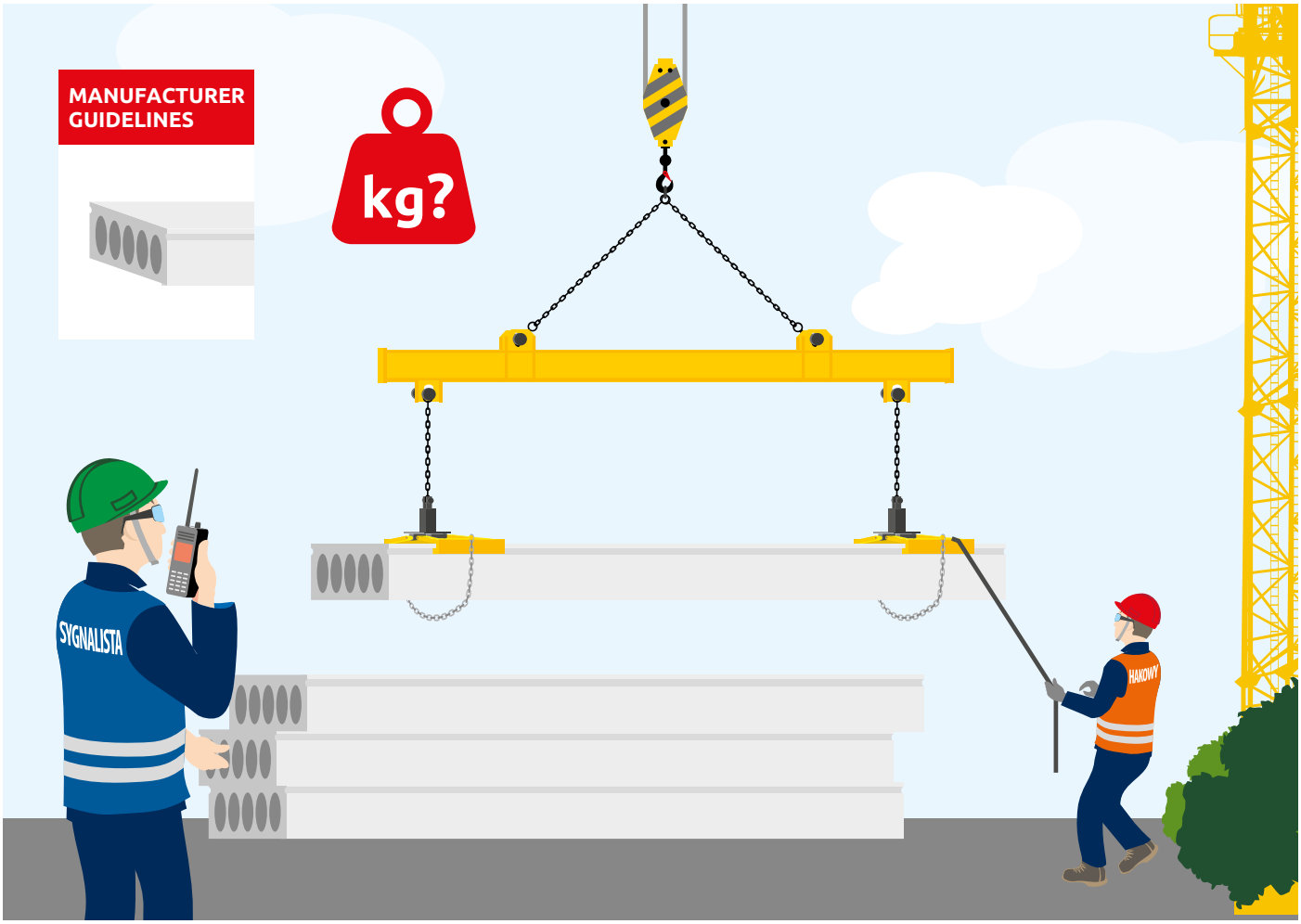
- Used beams are certified and designed for specific piles specified in the installation design.
- Ensure a line is attached to the beam, for its safe detachment.
- Estimate the load weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

When unloading reinforced concrete piles, use clamps specified by the manufacturer or in the installation design attached to double-leg chain slings, and maintain the acceptable angle.

PREFABRICATED HOLLOW CORE REINFORCED CONCRETE SLABS

An example weight of a hollow slab, type S, 27 cm thick, 1m² = ca. 400 kg.

The weight is provided on the product plate or in the manufacturer's operating manual.



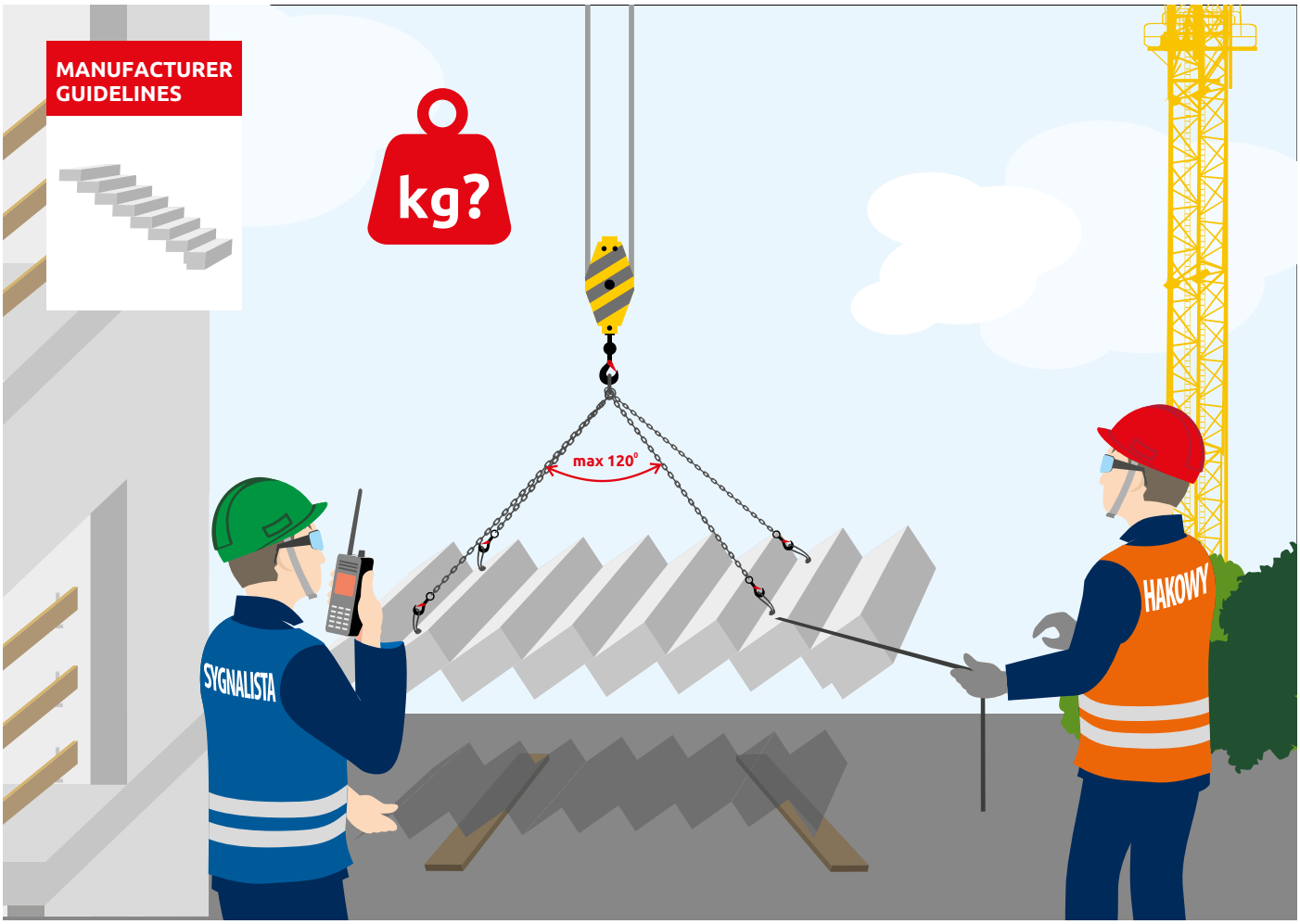
Conduct transport in accordance with the manufacturer's operating manual that may contain additional guidelines.

- The vertical transport of hollow slabs should be conducted using beams with lugs, and in accordance with guidelines of the manufacturer or in the design.
- Additionally, securing chains, fastened under the slab should be used.
- Before the load is fastened, the weight of an element should be estimated.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

PREFABRICATED STAIRS OR OTHER ELEMENTS
PREFABRICATED ASYMMETRIC

The weight is provided on the product plate or in the manufacturer's operating manual.

1 m^3 of a reinforced concrete element = ca. 2.5 tonnes.



Conduct transport in accordance with the manufacturer's operating manual that may contain additional guidelines, other than provided below.

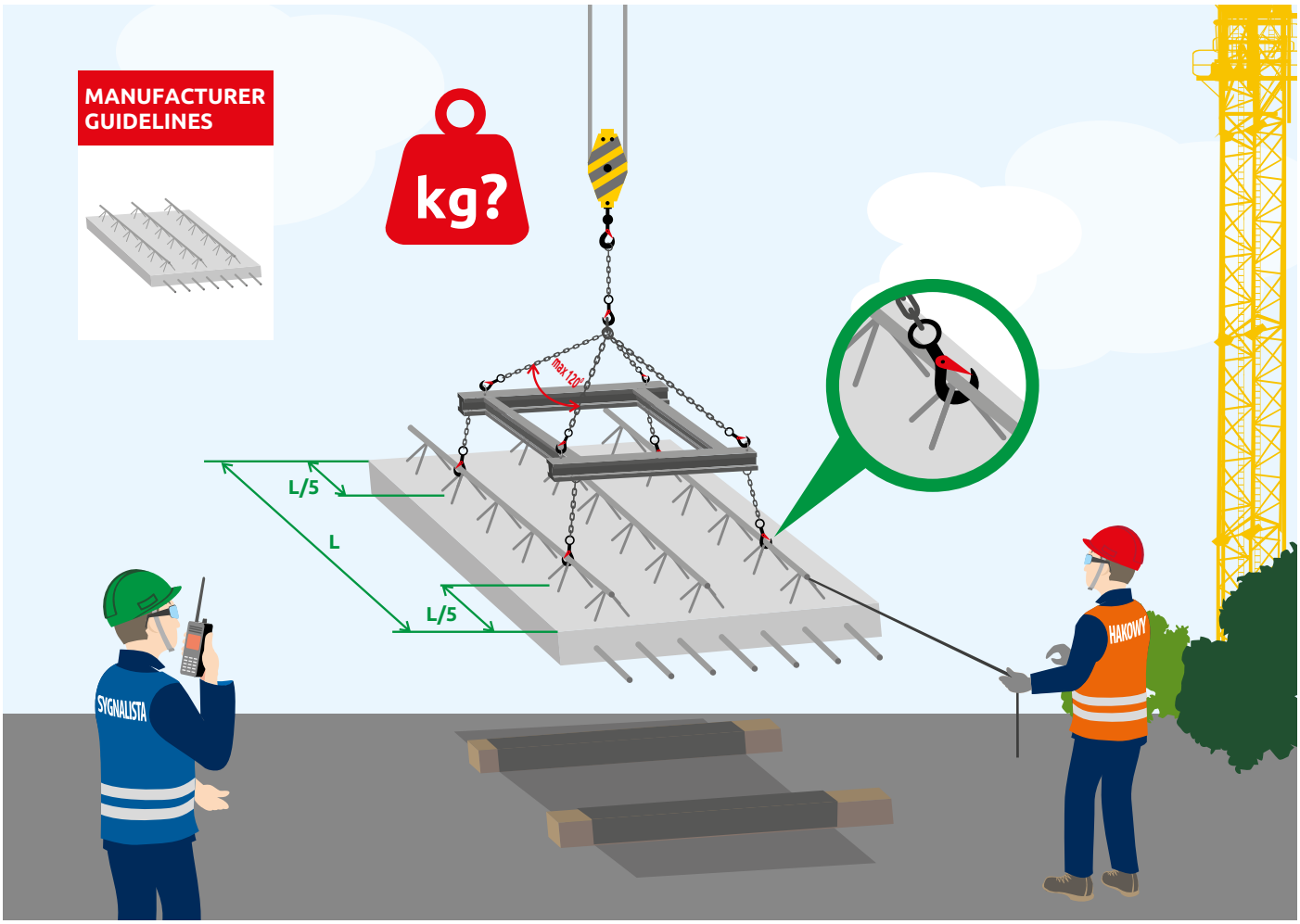
- Use 4-leg chain slings.
- Adjust sling length to an element, so the load is well balanced during transport.
- Use clamps in accordance with manufacturer's guidelines.
- Maintain a required angle, not exceeding 120°.
- Estimate the element weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

REINFORCED CONCRETE FLOORING OF A FILIGREE TYPE

Check the weight in a design.

An indicative slab weight, for a specified thickness:

PF 50 = ca. 130 kg/m^2
PF 60 = ca. 150 kg/m^2
PF 70 = ca. 180 kg/m^2



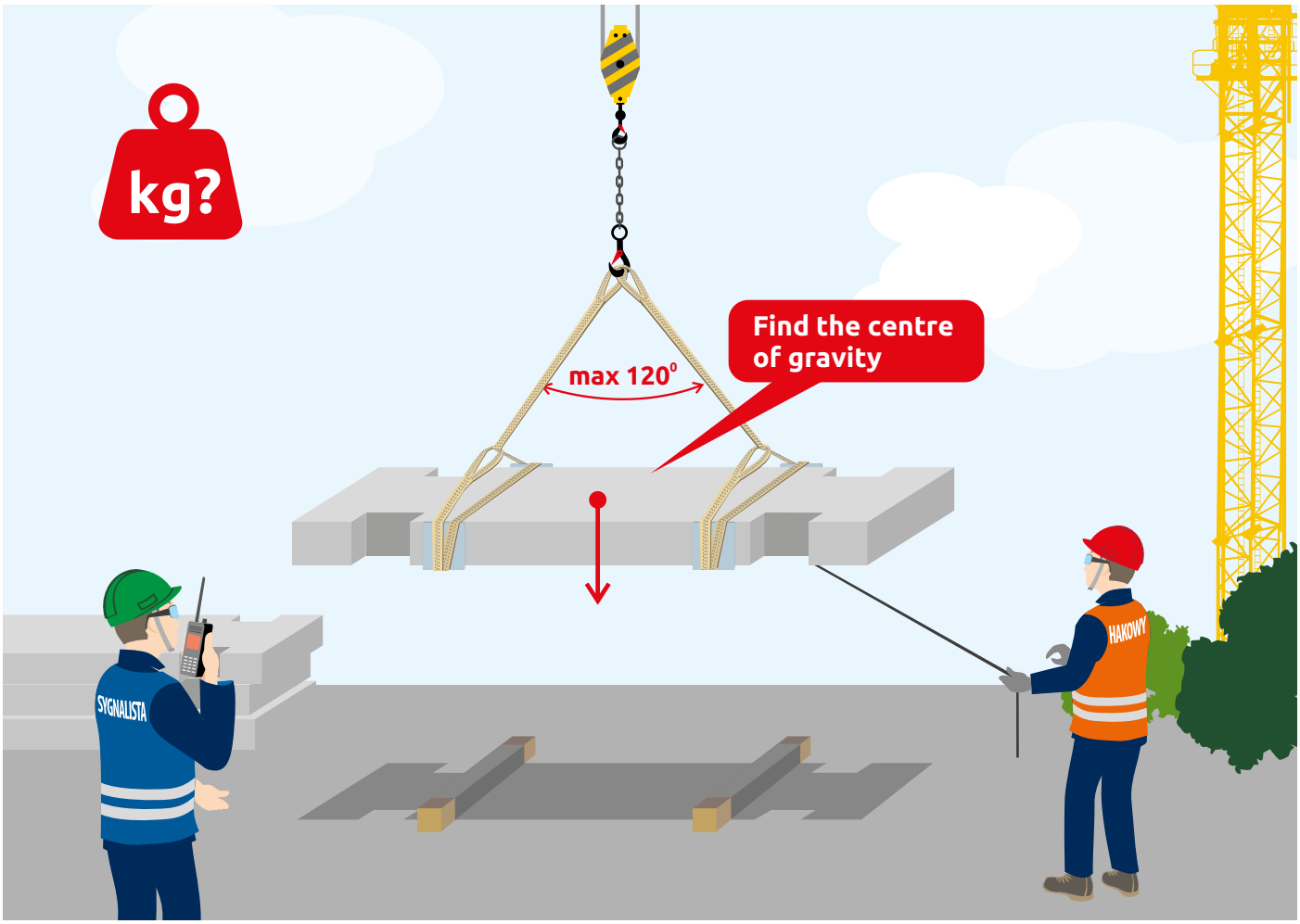
Conduct transport in accordance with the manufacturer's operating manual that may contain additional guidelines.

- Use beams for transport.
- Attach the slab at a distance of 1/3 of its length from the ends, in reinforcement nodes.
- Alternately, use 4-leg chain slings.
- Hooks should be attached to elements specified by a manufacturer.
- Maintain an acceptable angle between slings, not exceeding 120°.
- Estimate the element weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

ROAD SLABS

The weight of road slabs:

300x100x12 = ca. 880 kg
300x100x15 = ca. 1060 kg
300x150x15 = ca. 1580 kg
300x150x20 = ca. 2120 kg



For the transport of road slabs without lugs use two choker belt slings wrapped twice around the load, fastened at 1/4 of their length from the edges, and attached to a chain sling.

- Secure belt slings at the load edges protecting them against wear.
- Balance the load well, find the centre of gravity by adjusting the slings.

During the transport of slabs with or without lugs:

- Maintain an acceptable angle between slings, not exceeding 120°.
- Check/estimate the slab weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

ROAD SLABS

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300x100x12 = ca. 880 kg
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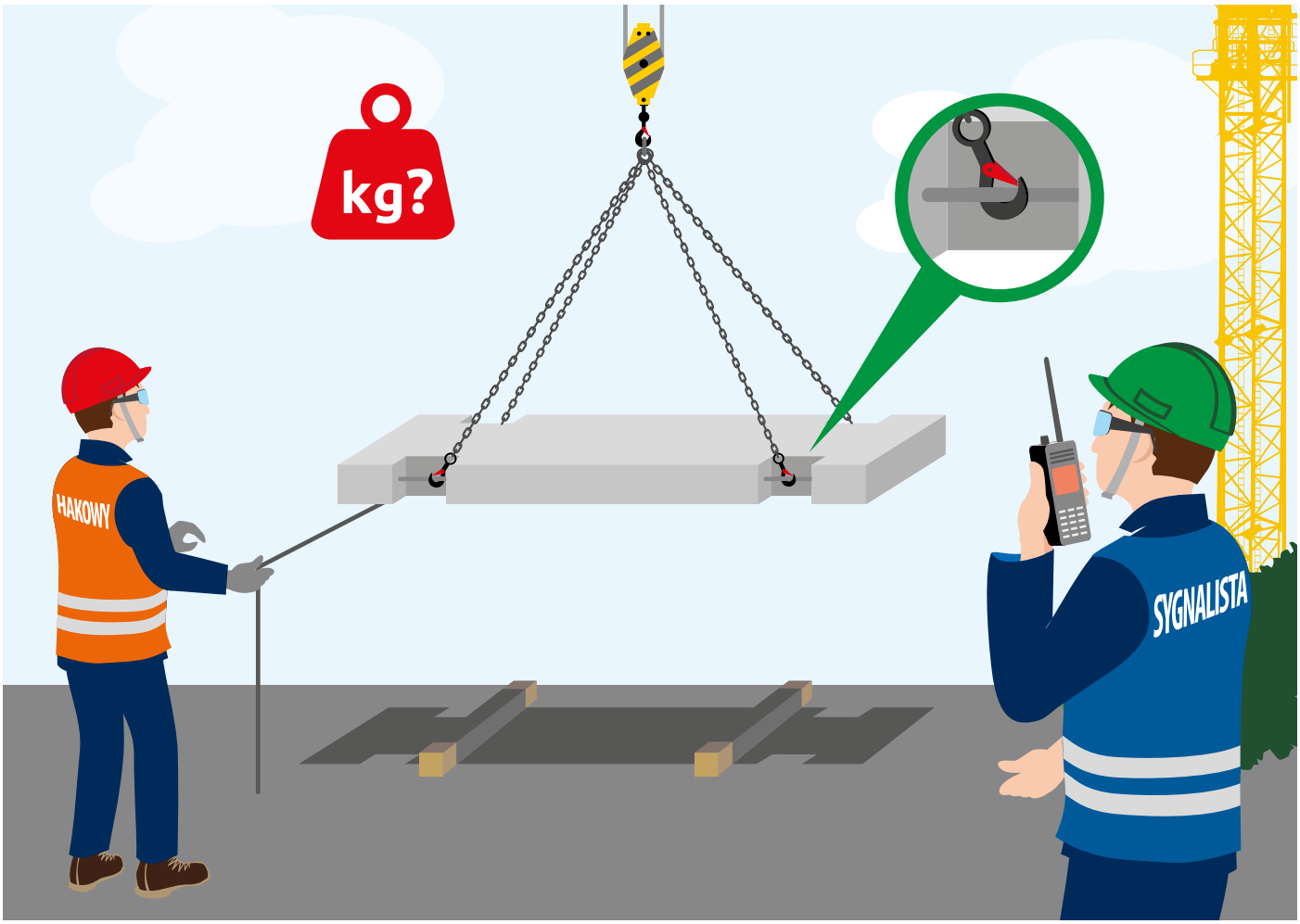


Road slabs with lugs should be transported using 4-leg chain slings.

- Attach hooks from the inside of the slab (a hook catch facing outside).

4. TRANSPORT OF PIPES, SEWAGE/WATER SUPPLY SYSTEM COMPONENTS

STEEL AND PLASTIC PIPES

An example weight:

steel pipe 500x8x6000 mm = ca. 550 kg
HDPE pipe dia. 500 = 45 kg/rm

- Use two choker belt slings fastened around the pipe.
- Attach slings directly to a crane hook block or to double-leg chain slings.
- Maintain an acceptable angle between slings, not exceeding 120°.
- Estimate the element weight.
- Use pads for storage and safe disconnecting of the load.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

MODULAR FORMWORKS FOR SECURING OF TRENCHES

The weight of steel formworks:

300x200 cm = ca. 400 kg

Conduct transport in accordance with the manufacturer's operating manual that may contain additional guidelines.

- Use 4-leg chain sling for transport.
- Hooks should be attached with a catch facing outside.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**
- **It is forbidden t lift and pull a formwork from a trench with a crane when that formwork is ballasted with earth.**
- To pull it out, use an excavator adapted to transport works in accordance with an excavator operating manual.

WELLS AND WATER SUPPLY/SEWAGE SYSTEM COMPONENTS (RINGS, BOTTOM SLABS)

An example weight of a concrete ring:

ø 800/600 mm = ca. 450 kg
ø 800/1000 mm = ca. 1000 kg

Rings should be transported and attached using clamps for rings in accordance with an operating manual of a manufacturer of the clamps and their working load limit.

- Use 3- or 4-leg chain slings, depending on a number of transport clamps.
- Check the working load limit for clamps in their operating manual.
- Check their correct and secure attachment on the ring.
- Estimate the element weight.

During the transport:

- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

WELLS AND WATER SUPPLY/SEWAGE SYSTEM COMPONENTS (RINGS, BOTTOM SLABS)

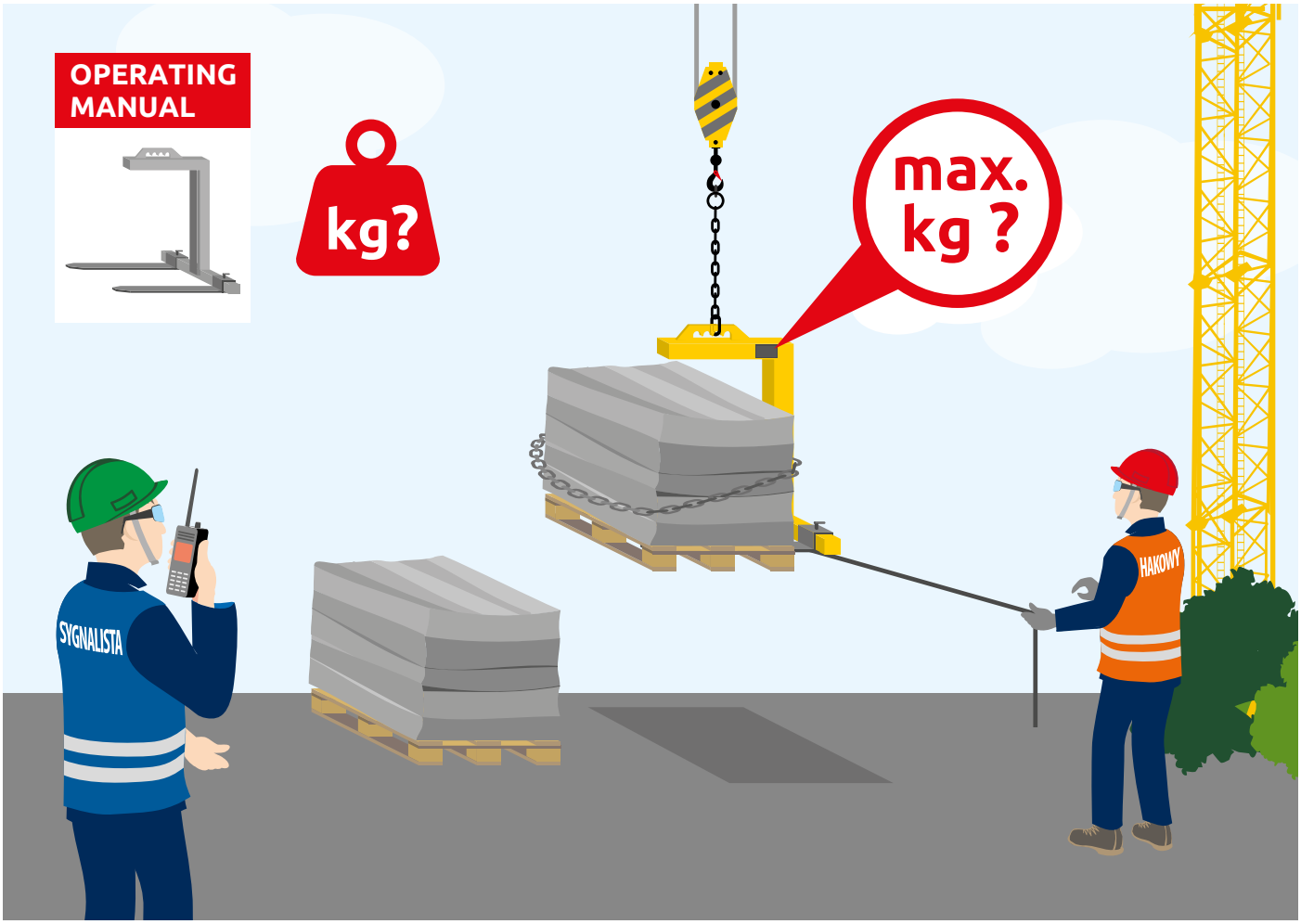
5. TRANSPORT OF HOLLOW BRICKS, BRICKS, COMPONENTS ON PALLETS

CERAMIC HOLLOW BRICKS

An example weight:

P+W 44 pallet = ca. 790 kg
P+W 38 pallet = ca. 1000 kg
P+W 25 pallet = ca. 850 kg

Pallet with full brick = ca. 1.4 tonnes

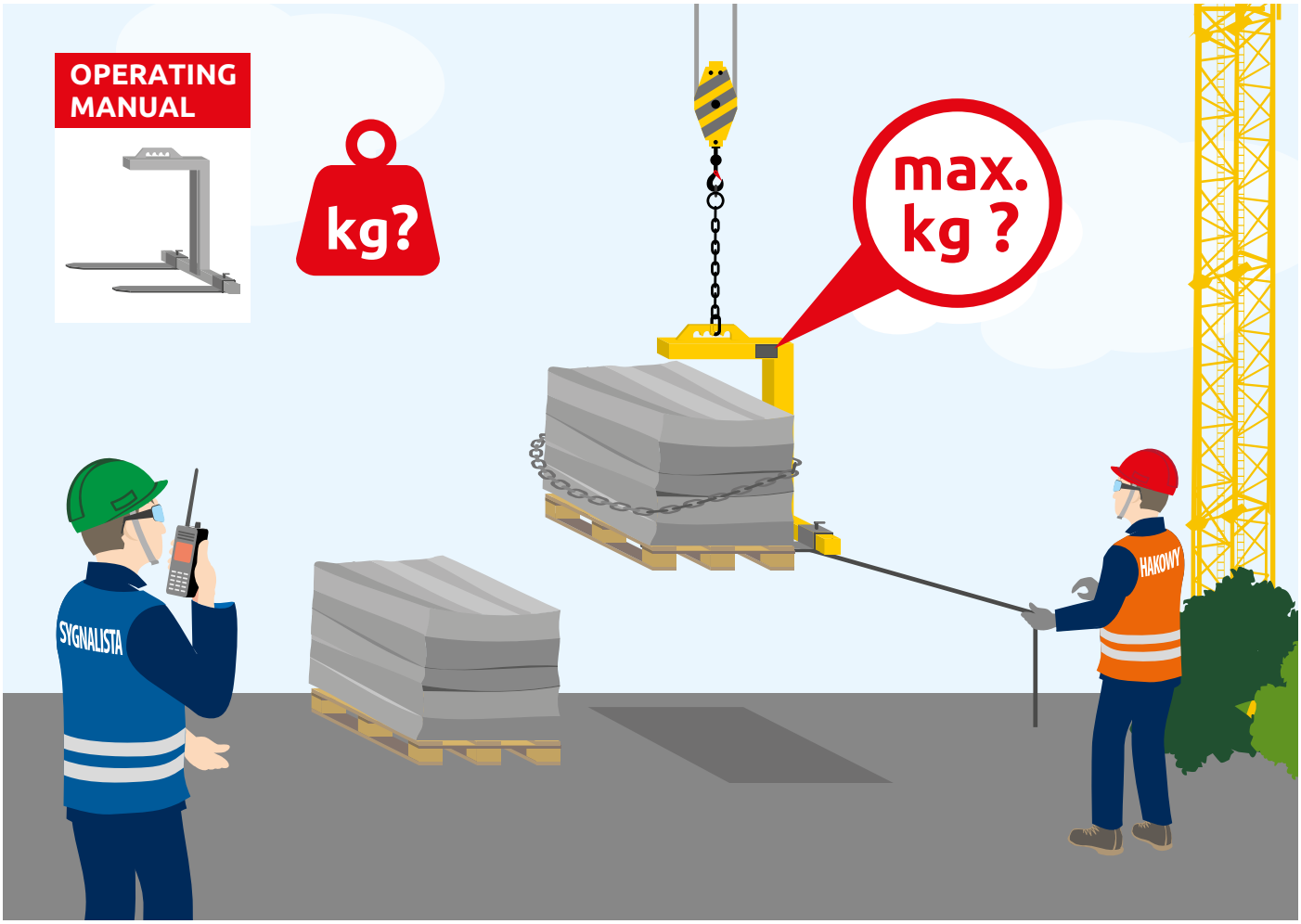


Use a pallet fork for transport, in accordance with a manufacturer's operating manual.

- Attach the fork for transport of pallets to a one-leg chain sling or directly to a crane hook block, in accordance with the fork manufacturer's operating manual.
- Secure the load on the pallet against slipping from the fork with a chain fastened around it.
- Hollow bricks to be transported on a pallet should be secured with plastic film against moving.
- Before the vertical transport, check whether the load is levelled (if the dedicated clamp is not self-levelling).
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

PALLET OF CEMENT, MORTAR

Weight of a pallet with cement = ca. 1.0 tonne



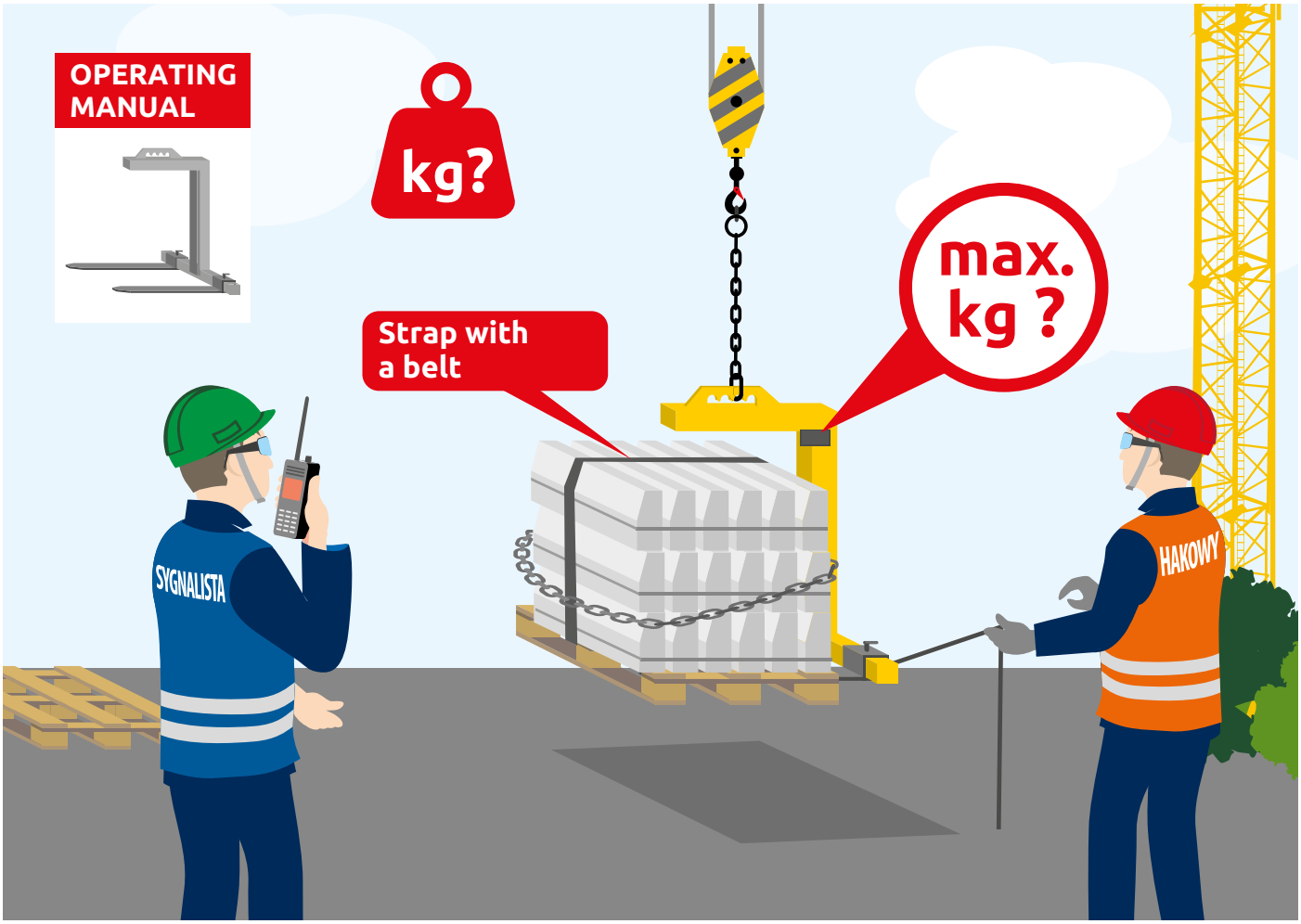
Use a pallet fork for transport, in accordance with a manufacturer's operating manual.

- Attach the fork for transport of pallets to a one-leg chain sling or directly to a crane hook block, in accordance with the manufacturer's operating manual.
- Secure the load on the pallet against slipping from the fork with a strapping chain.
- Bags to be transported on a pallet should be secured with plastic film against moving.
- Before the vertical transport, check whether the load is levelled (if the dedicated clamp is not self-levelling).
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

CURBS, PAVING BLOCKS ON PALLETS

Pallet with paving blocks = ca. 1.6 tonnes

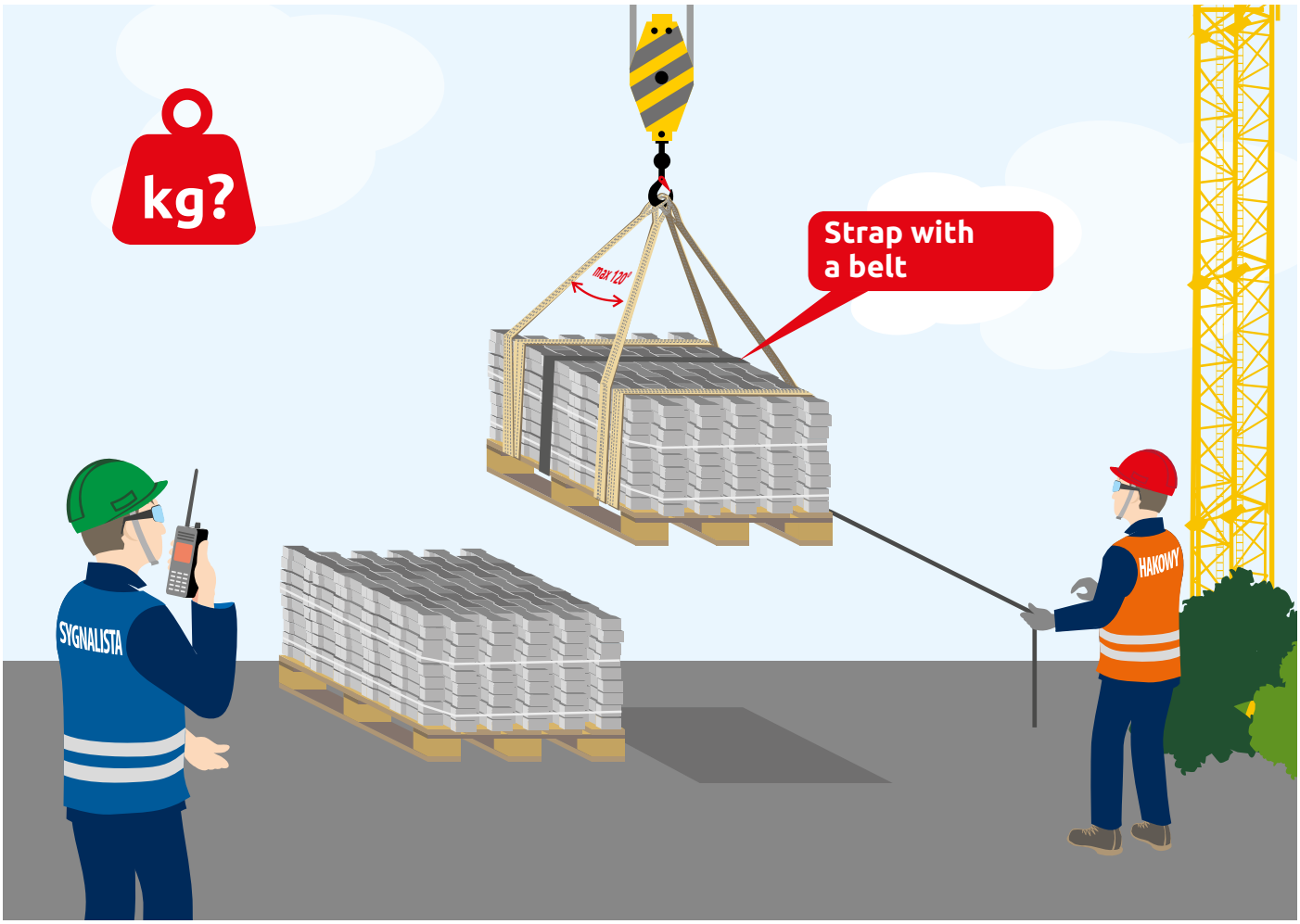
Pallet with road curbs = ca. 1.5 tonnes



Use a pallet fork for transport, in accordance with a manufacturer's operating manual.

- Attach the fork for transport of pallets to a one-leg chain sling or directly to a crane hook block, in accordance with the fork manufacturer's operating manual.
- Secure the load on the pallet against slipping from the fork with a strapping chain.
- Blocks/curbs to be transported on a pallet should be secured with plastic film and/or transport belt against moving.
- Before the vertical transport, check whether the load is levelled (if the dedicated clamp is not self-levelling).
- Estimate the element weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

CURBS, PAVING BLOCKS ON PALLETS



Alternately, transport using belt slings.

- Wrap belt slings twice around the load, passing them through holes in the pallet.
- Belts should be attached to chain slings, maintaining a safe angle between their legs.
- A load to be transported should be secured with plastic film against spilling.
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

PAVING ELEMENTS IN BIG-BAGS

The weight of granite blocks in a big-bag - ca. 2.5 tonnes

- Granite blocks packed in big-bags should be transported using 4-leg chain slings.
- Attach hooks to bag handles, with a hook catch facing outside.
- Estimate the load weight.
- Check thoroughly the operational condition of the bag.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

TAR PAPER ON ROLLS ON A PALLET

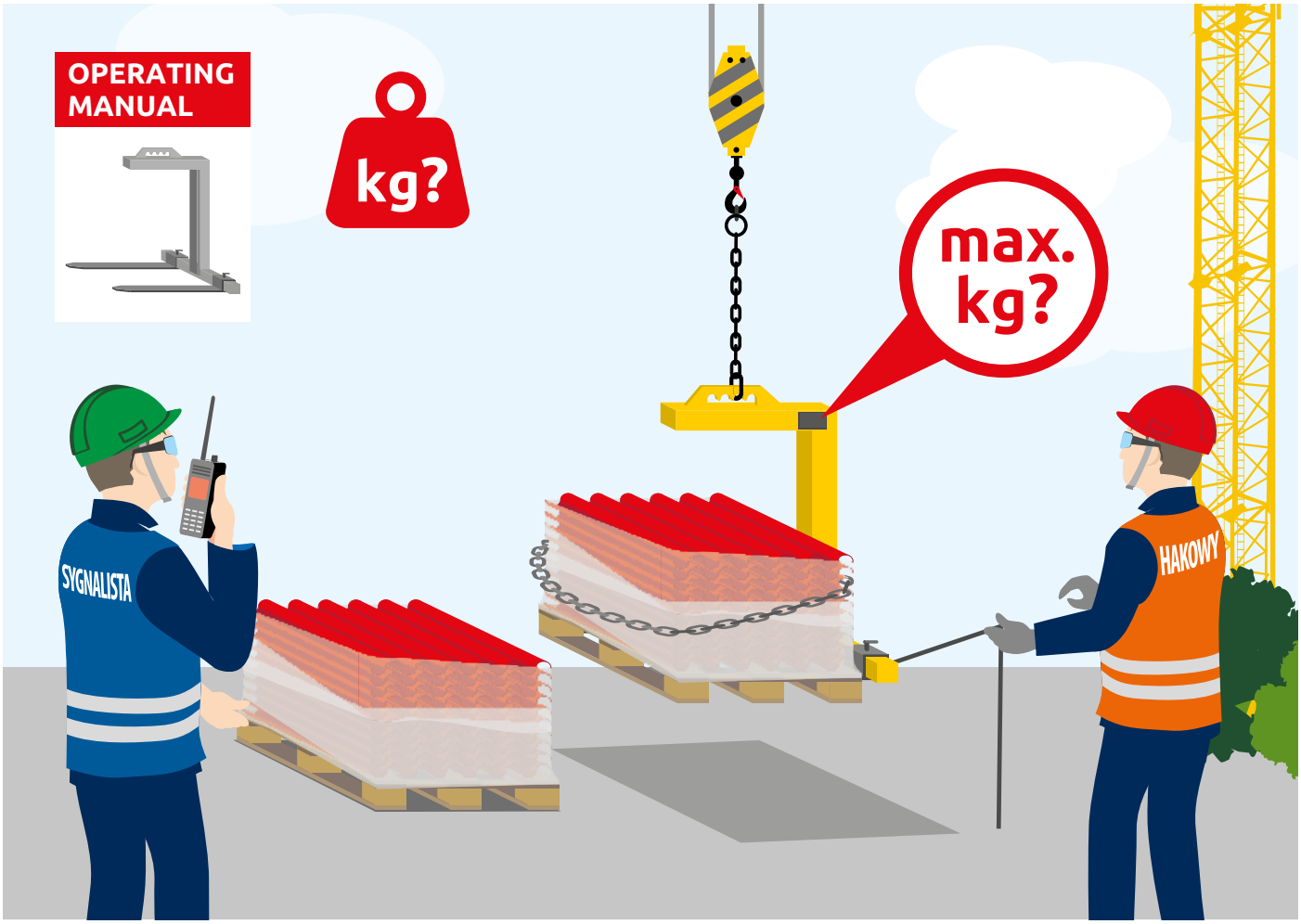
Pallet with tar paper = ca. 1.0 tonne

Use a pallet fork for transport, in accordance with a manufacturer's operating manual.

- Attach the fork for transport of pallets to a one-leg chain sling or directly to a crane hook block, in accordance with the fork manufacturer's operating manual.
- Secure the load on the pallet against slipping from the fork with a strapping chain.
- Tar paper rolls to be transported on a pallet should be secured with plastic film against moving.
- Before the vertical transport, check whether the load is levelled (if the clamp is not self-levelling).
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

STEEL SHEETS

Check the weight on the manufacturer's sticker



Use a pallet fork for transport, in accordance with a manufacturer's operating manual.

- Attach the fork for transport of pallets to a one-leg chain sling or directly to a crane hook block, in accordance with the fork manufacturer's operating manual.
- Secure the load on the pallet against sliding from the fork by using a strapping chain.
- Steel sheets to be transported on a pallet should be secured with plastic film against moving.
- Before the vertical transport, check whether the load is levelled (if the dedicated clamp is not self-levelling).
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

CONTAINERS FOR CONCRETE WORKS

The weight of an empty container:
2 m^3 = ca. 500 kg

Concrete weight:
1m^3 = ca. 2.1 tonnes

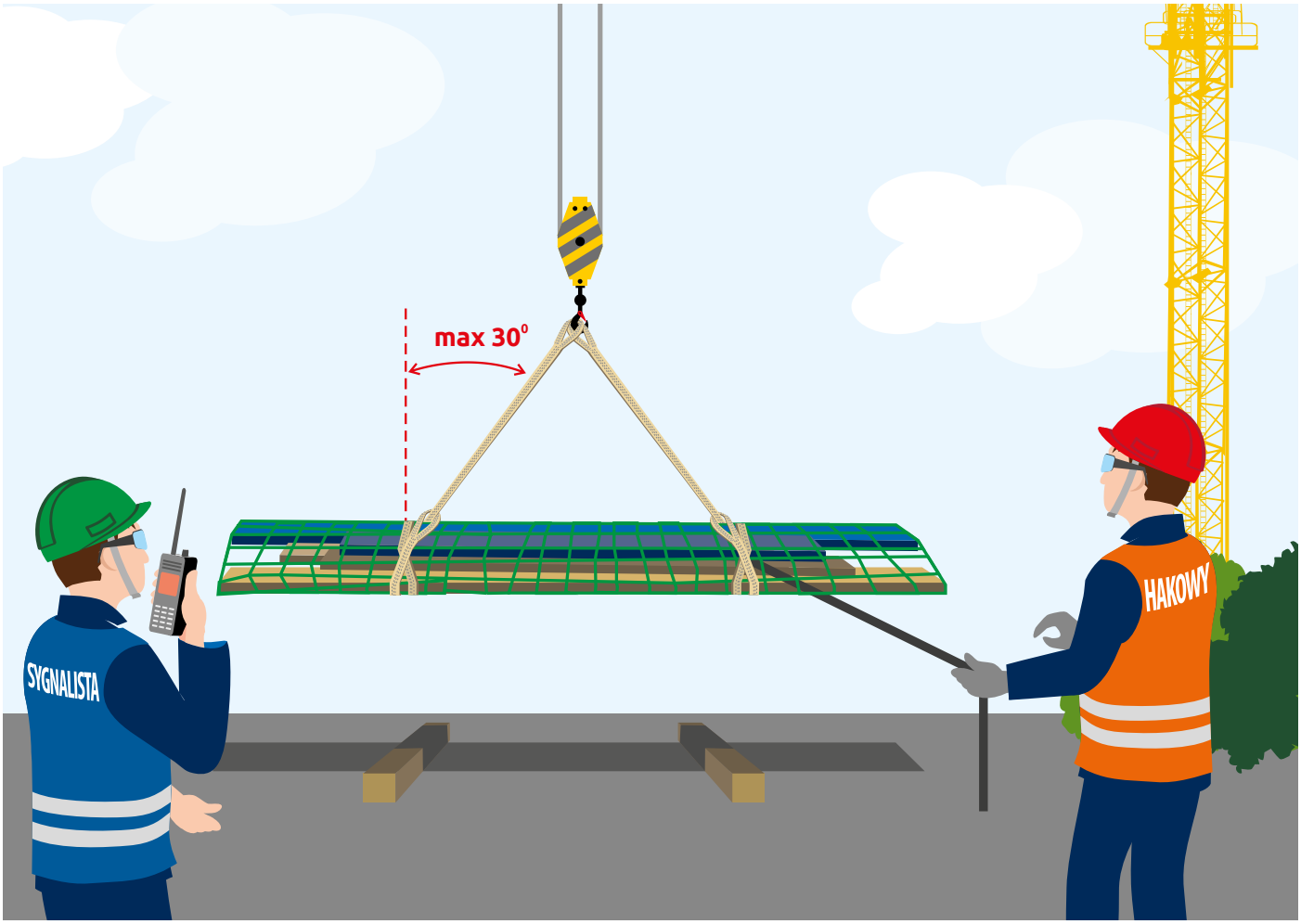
Transport a container for concrete in accordance with a manufacturer's operating manual.

- Use 3- or 4-leg chain slings for transport, depending on a number of container lugs.
- Evaluate the weight of the container with concrete.
- Use a tag line for guiding the container.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**
- It is forbidden to stay on the container (including the platform attached to the container) or directly under it during concrete works.
- Use a chain mechanism to release pouring of concrete.

6. SAWN TIMBER TRANSPORT

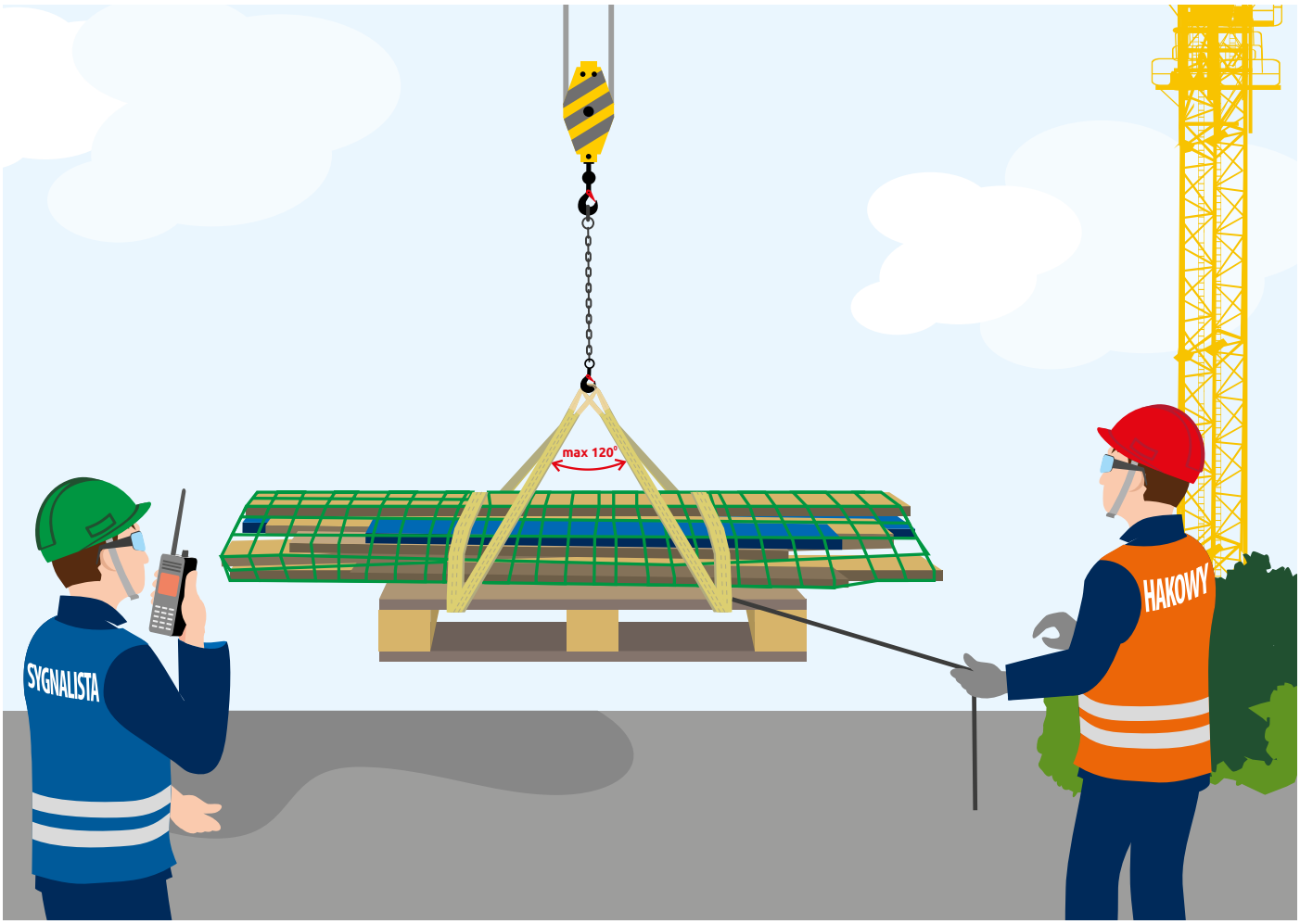
SINGLE LONG LOOSE COMPONENTS OF SAWN TIMBER (PLANKS, SQUARE TIMBER)

The weight of 1 m^3 of the sawn timber, depending on a tree species, water/moisture content = ca. 600–800 kg



- For transport, use two choker belt slings wrapped twice around sawn timber, and then attached to crane chain slings.
- When a pallet is used, it should also be strapped with slings.
- Maintain an acceptable angle between slings not exceeding 120°.
- The sawn timber to be transported vertically should be laid on pads in packs containing material of identical/similar length.
- Packs laid in several layers should be strapped with transport tapes/belts ensuring stable position of the load during storage and when slings are attached.
- The pack hight to width ratio should not be below ½.
- Used sawn timber of various length should be transported in containers (for short pieces) or a net securing parts of the load from falling down (for longer pieces).
- Use ladders to attach a pack of material stored in several layers.
- Do not climb onto the stored material.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- It is forbidden for people to be under a transported load.

SINGLE LONG LOOSE COMPONENTS OF SAWN TIMBER (PLANKS, SQUARE TIMBER)



USED PLYWOOD

Weight:
Plywood panel 125x250 = ca. 50 kg
Pallet of plywood 125x250 = ca. 1.5 tonnes

- For transport, use two choker belt slings wrapped around sawn timber, and then attached to crane chain slings.
- Maintain an acceptable angle between slings, not exceeding 120°.
- The plywood to be transported vertically should be laid on pads in packs containing material of identical dimensions.
- Packs laid in several layers should be strapped with transport tapes/belts ensuring stable position of the material during storage and when slings are attached.
- Used plywood of various dimensions should be transported in containers (for short pieces), or with a net securing parts of the load from falling down. Furthermore, the material to be transported should be sorted.
- Use ladders to attach material stored in several layers.
- Do not climb onto the stored material.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

MACHINES, E.G. COMPACTORS, GENERATORS, PUMPS, COMPRESSORS, TABLE SAWS, VENTILATION UNITS

A large compactor = ca. 700 kg
A compressor = ca. 800 kg

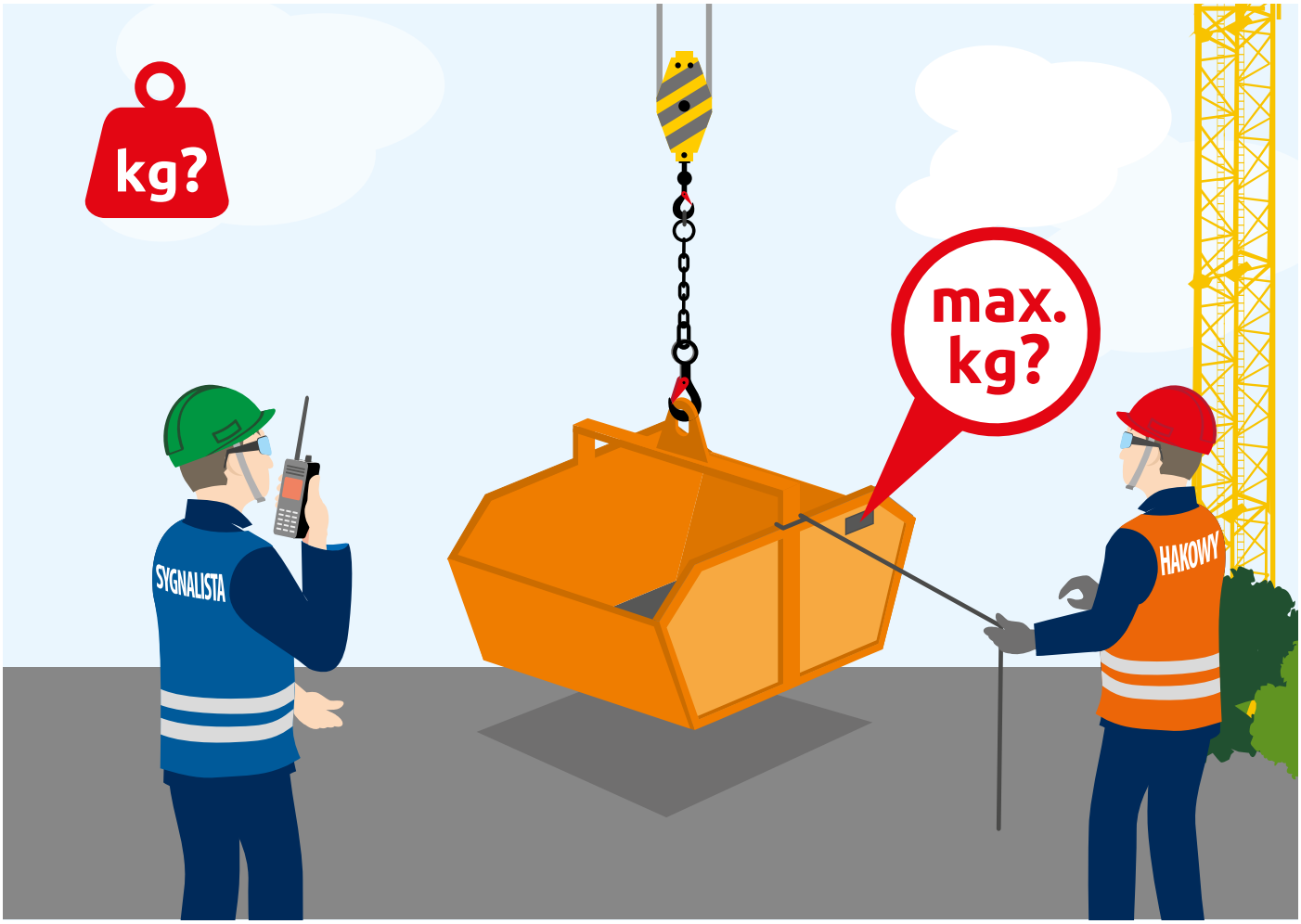
Conduct transport in accordance with the manufacturer's operating manual that may contain additional guidelines.

- Use 1-leg or multi-leg chain, rope or belt slings.
- Attach to lugs specified in an operating manual provided by a device manufacturer.
- Check the weight of each device or machine in its nameplate.
- For the choker belt sling - attach to a device transport lug.
- For the chain/rope belt sling with a hook - attach the hook to a device transport lug.
- Transport a device divided into small modules - if the manufacturer allows.
- Use slings that do not damage the devices, usually belt or special slings dedicated by the manufacturer.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

MACHINES, E.G.: COMPACTORS, GENERATORS, PUMPS, COMPRESSORS, SAWS TABLE, VENTILATION UNITS

SMALL CONTAINER FOR RUBBLE

The weight of a small container = ca. 200 kg



- Use 1-leg chain sling.
- Attach to a transport lug.
- Check a load capacity of the container in its nameplate.
- Estimate the load weight.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

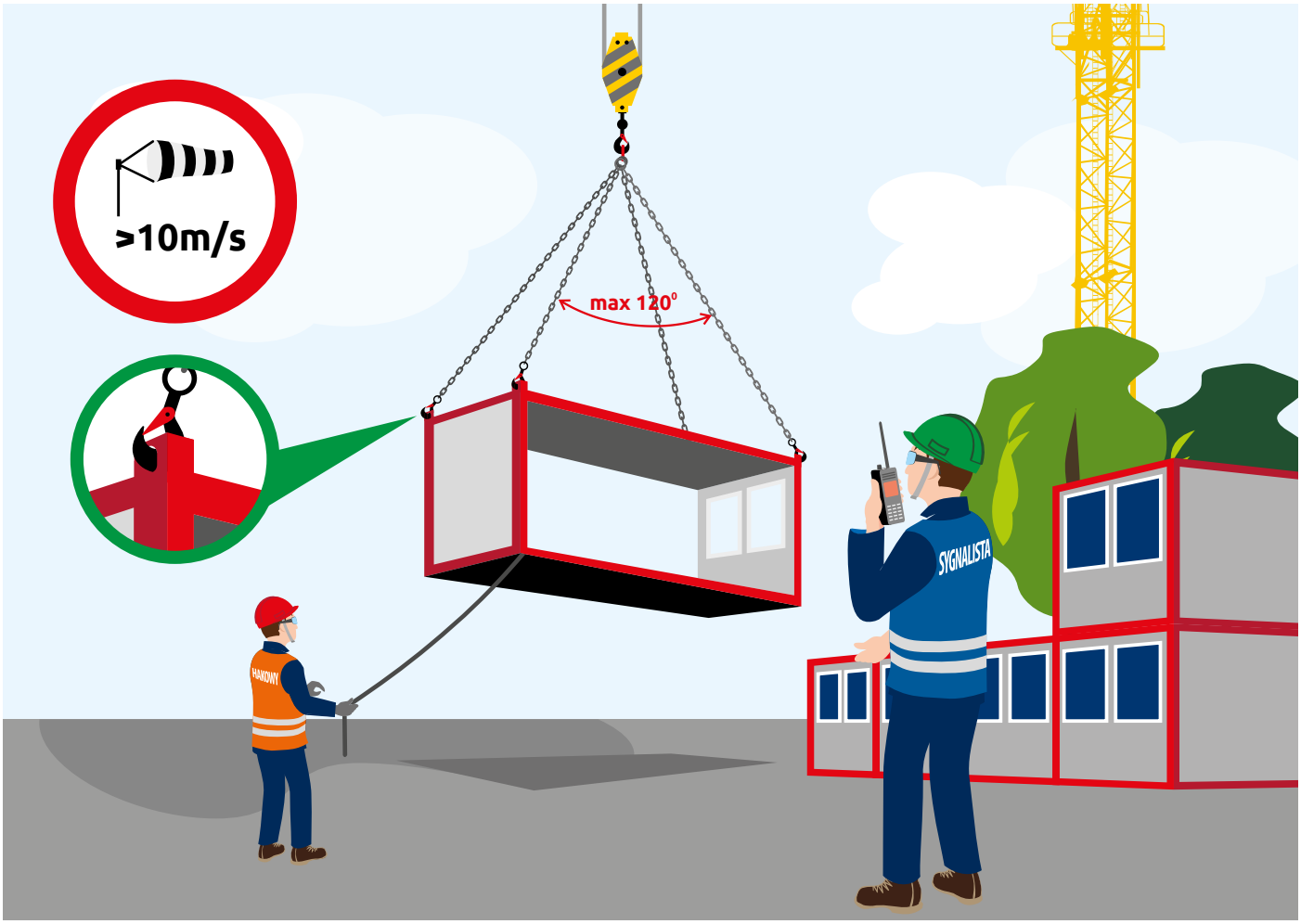
CONTAINERS FOR CONSTRUCTION WASTE

Empty steel container KP-7 = ca. 700 kg

- For transport, use a 4-leg chain sling, the chains should be attached to relevant structural components of the container (eyes, links, lugs).
- During the transport, the container should be covered, e.g., with a net or tarpaulin, so no loose items fall out or are blown out by the wind.
- Estimate the load weight, depending on a type of waste in the container.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

CONTAINERS FOR SOCIAL FACILITIES

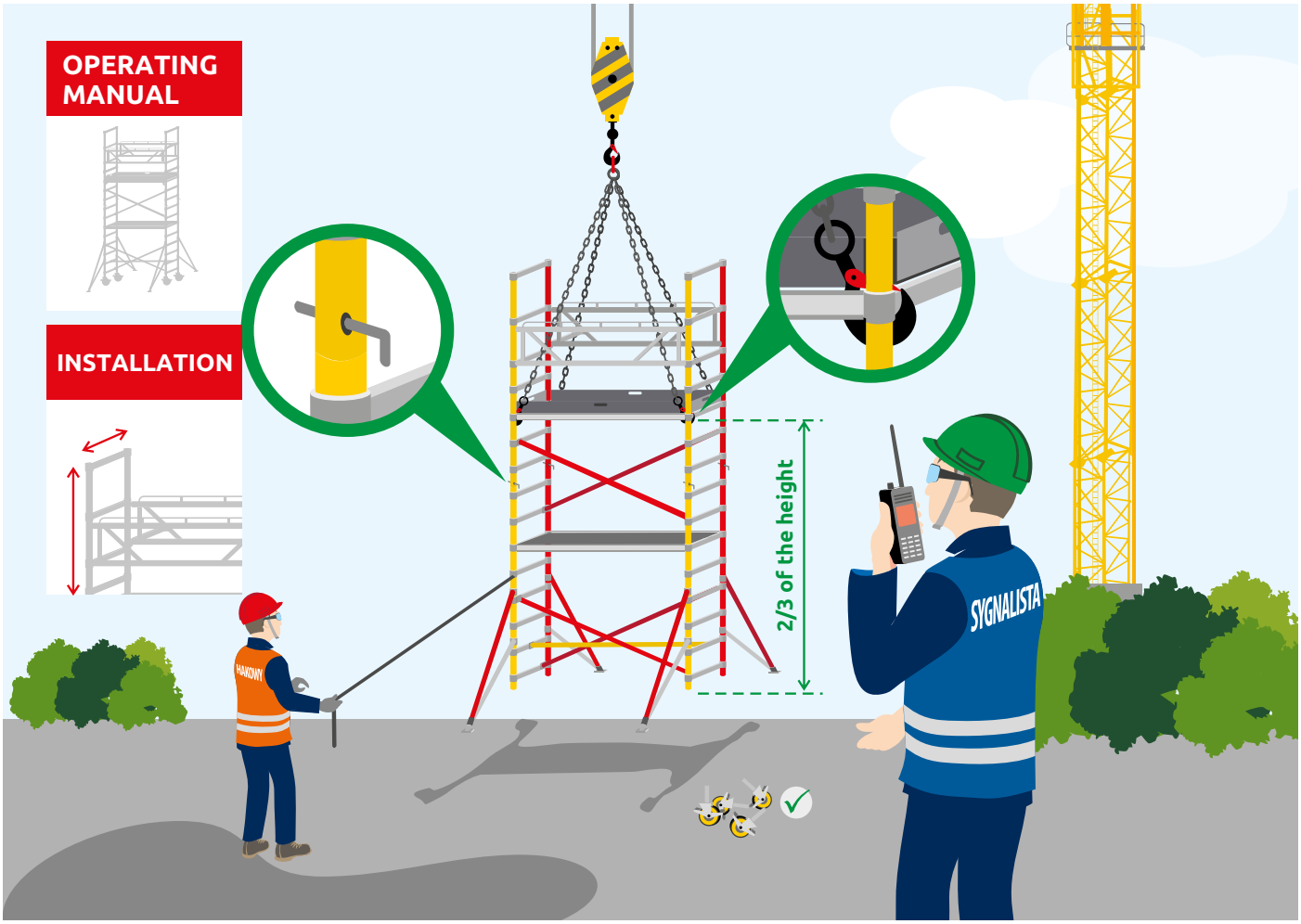
The container weight according to the manufacturer's specification.



- Transport with 4-leg slings attached to factory-installed container lugs.
- Hooks should be attached with a catch facing outside.
- Note the wind strength.
- Maintain an acceptable angle between sling legs, not exceeding 120°.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

MOBILE MODULAR SCAFFOLDINGS

The weight should be checked each time in a scaffolding operating manual.



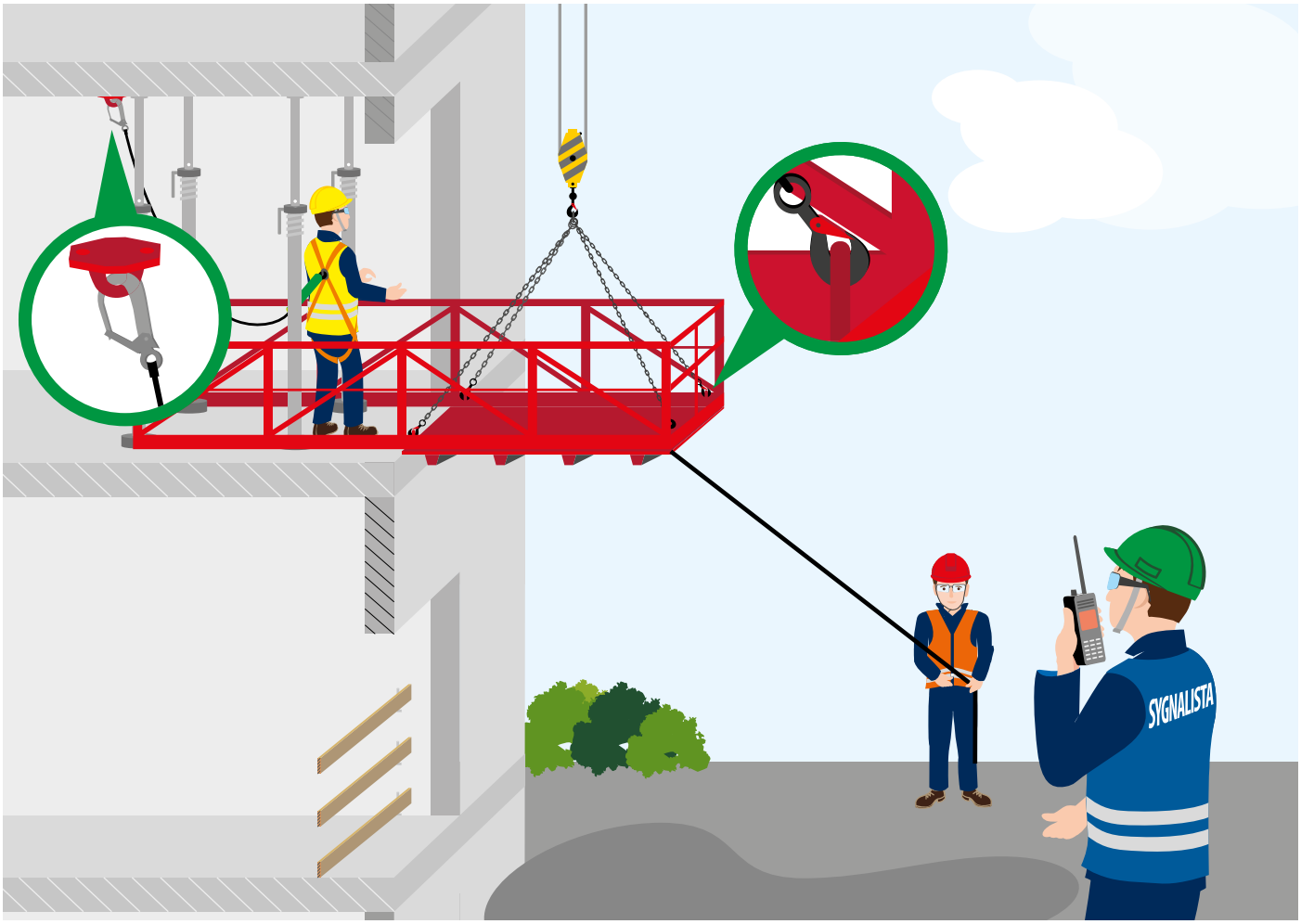
The scaffolding should be transported in accordance with the manufacturer's operating manual. When the manual does not provide information on a method of transporting the scaffolding, an individual design for its lifting should be prepared, taking into account the guidelines below.

- Attach the scaffolding to a 4-leg chain sling, hooks should be attached at ca. 2/3 of the height of the transported scaffolding, to its structural components.
- Secure or dismantle loose elements of the scaffolding, e.g., wheels or feet, so they do not fall down.
- Secure scaffolding segments against disconnecting by using pins.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

MODULAR UNLOADING PLATFORMS

Check the weight in the operating manual.

For example, a large platform = ca. 850 kg



Transport the platform in accordance with a manufacturer's operating manual.

- Attach the platform with a 4-leg chain sling.
- Hooks should be attached to transport lugs of the platform - their location should be determined on a basis of the platform operating manual.
- Workers performing assembling or disassembling must use personal protection equipment for works at height, attached to an anchoring point.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**
- Install the platform in such way that **there is no gap between the platform and the wall face.**

STYROFOAM

1m³ of Styrofoam = ca. 13 kg

- Transport using two belt slings wrapped twice around Styrofoam packs, and then attached to a chain sling of a crane.
- Loose Styrofoam panels should be secured by strapping them with belts or wrapping in plastic film.
- Note the wind strength during the transport.
- When necessary, use a tag line to guide the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

TANKS FOR WATER AND OTHER SUBSTANCES

The weight of the load depends on a tank weight and on a quantity of the transported substance. 1m^3 of water = ca. 1000 kg

- Use 4-leg chain slings with hooks attached at the tank base.
- Hooks should be attached with a catch facing outside.
- Maintain an acceptable angle between slings, not exceeding 30°.
- Take into account relevant requirements, e.g., manufacturer's marking concerning a way for transporting the tank.
- Check the quantity of the substance in the tank and closing of the tank valve.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**

CYLINDERS WITH TECHNICAL GASES

The load weight depends on the basket weight, the number of cylinders and how much gas they contain. Steel cylinder with oxygen = ca. 60 kg

- The vertical transport of gas cylinders should only be performed in certified baskets dedicated to transport of such cylinders.
- The transport basket should be attached to a 4-leg chain sling using dedicated lugs.
- Cylinders to be transported should be free of any welding accessories, and should be secured with caps.
- Cylinders to be transported must be effectively secured against moving, i.e., strapped, attached to the basket.
- Use a tag line for guiding the load.
- Perform a trial lift of a load to a height of 0.5 m and check if the load is attached correctly.
- **It is forbidden for people to be under a transported load.**