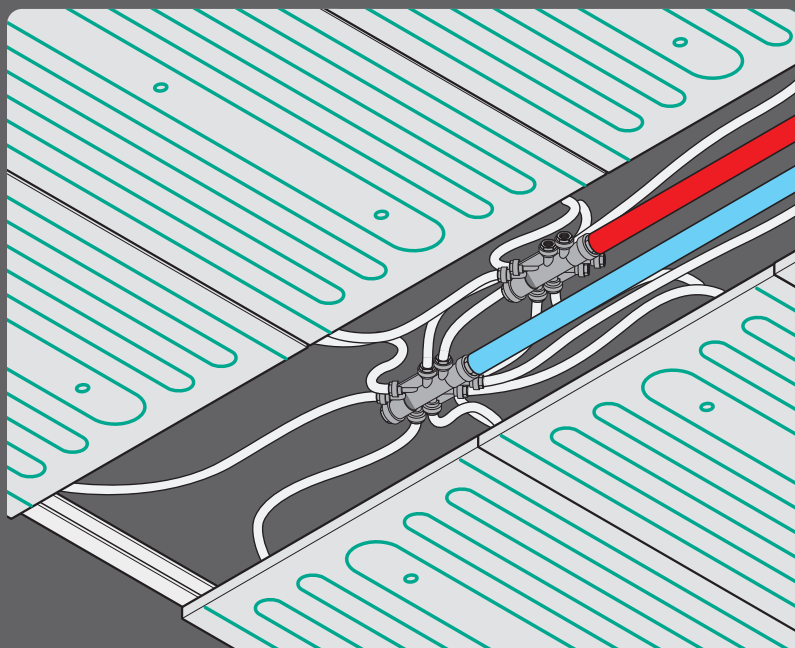


b!klimax radiant systems
Sistemi radianti b!klimax



Traditional b!klimax **b!klimax Tradizionale**

Heating and Cooling ceiling system
Climatizzazione estiva e invernale a soffitto



INSTALLATION MANUAL
MANUALE INSTALLAZIONE



SAFETY WARNINGS - AVVERTENZE PER LA SICUREZZA

Please, read this manual before installation and/or use of the equipment and keep it in an accessible place.

This equipment is part of complex installation; the designer's responsibility has to draw up the thermal diagram and statically verify the supporting structures.

The manufacturer's technical department is available at the phone numbers listed on the back of this manual for advice or particular technical requests.



CAUTION

Installation and maintenance should be performed by qualified personnel only.

Hydraulic systems and rooms in which the equipment is to be installed must meet the required standards regarding safety, accident and fire prevention currently in force in the

Leggere con attenzione questo manuale prima dell'installazione e/o dell'uso dell'apparecchiatura e conservarlo in un luogo accessibile.

La presente apparecchiatura costituisce un componente che fa parte di installazioni complesse: è compito del progettista redigere lo schema termico e verificare staticamente le strutture portanti.

L'ufficio tecnico del Costruttore si rende disponibile ai numeri indicati sul retro del presente manuale per consulenze o richieste tecniche particolari.



ATTENZIONE

L'installazione e la manutenzione vanno eseguiti solo da personale qualificato.

Gli impianti idraulici ed i locali di installazione delle apparecchiature devono rispondere alle norme di sicurezza, antinfortunistiche e antincendio in vigore nel Paese di utilizzo.



GENERAL WARNINGS - AVVERTENZE GENERALI

- If after unpacking the packages any anomaly is noted, do not proceed with the installation and call an authorized service centre of the manufacturer.
- After installation, dispose of the packaging as required by regulations currently in force in the country of use.
- Always demand genuine parts: failure to observe this rule will invalidate the warranty.
- The manufacturer will not be held responsible under any circumstances for the following cases:
 - Where the safety regulations and safety standards outlined above are not complied with, including those in force in the country of installation.
 - Failure to follow the directions contained in this manual.
 - Damage to people, animals or property resulting from improper installation and/or misuse of products or equipment.
 - Inaccuracies or typographical or transcription errors and in this manual.
 - Furthermore, the manufacturer reserves the right to stop production at any time and to make any changes they deem necessary or useful, without the obligation of prior notice.

- Se dopo aver disimballato i colli si nota una qualsiasi anomalia, non procedere all'installazione e rivolgersi ad un Centro di Assistenza autorizzato dal Costruttore.
- Alla fine dell'installazione smaltire gli imballi secondo quanto previsto dalle normative in vigore nel Paese di utilizzo.
- Esigere solo ricambi originali: la mancata osservazione di questa norma fa decadere la garanzia.
- Il Costruttore declina ogni responsabilità nei casi seguenti:
 - Non vengano rispettate le avvertenze e le norme di sicurezza sopra indicate, comprese quelle vigenti nei paesi di installazione.
 - Mancata osservanza delle indicazioni segnalate nel presente manuale.
 - Danni a persone, animali o cose, derivanti da una errata installazione e/o uso improprio di prodotti e attrezzature.
 - Inesattezze o errori di stampa e trascrizione contenuti nel presente manuale.
 - Il Costruttore, inoltre, si riserva il diritto di cessare la produzione in qualsiasi momento e di apportare tutte le modifiche che riterrà utili o necessarie senza obbligo di preavviso.



DISPOSAL - SMALTIMENTO



In accordance with the provisions of the following European directives 2011/65/EU, 2012/19/EU and 2003/108/EC, regarding reducing the use of hazardous substances in electrical and electronic equipment, in addition to waste disposal.



In base a quanto previsto dalle seguenti direttive europee 2011/65/UE, 2012/19/UE e 2003/108/CE, relative alla riduzione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche, nonché allo smaltimento dei rifiuti.

The symbol of the crossed-out wheeled bin as shown on the product indicates that at the end of its useful life it must be disposed of separately from other waste.

The user must therefore dispose of the above equipment at the end of its useful life at an appropriate centre for the collection of electronic and electro-technical waste, or return it to the dealer when purchasing a similar new device in terms of one to one.

Il simbolo del cassonetto barrato riportato sull'apparecchiatura indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.

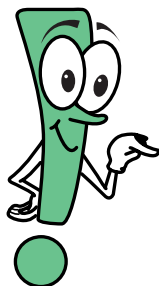
L'utente dovrà, pertanto, conferire l'apparecchiatura giunta a fine vita negli idonei centri di raccolta differenziata di rifiuti elettronici ed elettrotecnici, oppure riconsegnarla al rivenditore al momento dell'acquisto di una nuova apparecchiatura di tipo equivalente, in ragione di uno a uno.

Proper waste collection leading to the subsequent recycling, treatment and environmentally friendly disposal of the equipment helps to avoid possible negative effects on the environment and on health and promotes the recycling of the materials of which the equipment is made up.

Illegal disposal of the product by the user will lead to the application of penalties prescribed by current legislation in force.

L'adeguata raccolta differenziata per l'avvio successivo dell'apparecchiatura dismessa al riciclaggio, al trattamento e allo smaltimento ambientale compatibile contribuisce ad evitare possibili effetti negativi sull'ambiente e sulla salute e favorisce il riciclo dei materiali di cui è composta l'apparecchiatura.

Lo smaltimento abusivo del prodotto da parte dell'utente comporta l'applicazione delle sanzioni previste dalla vigente normativa in materia.



IMPORTANT WARNINGS - AVVERTENZE IMPORTANTI

- The measurements, types of profiles and installation solutions outlined in this manual are for guidance only. They can vary:
 - depending on the availability of materials on the market;
 - depending on the professionalism and experience of the installer and/or operator applying the plasterboard;
 - depending on the specific characteristics of the walls or ceiling (e.g. brick or pre-stressed, etc.) on which b!klimax panels are to be installed;
 - depending on the weight that the structure shall support (b!klimax panels weight, they weigh about $9,5 \text{ kg/m}^2$ + covering weight).
- RDZ is not responsible for incorrect installation or installation carried out with materials or procedures that do not meet the safety standards and regulations in force in the country of use.
- The positioning of the distributors must always take into account the location of b!klimax panels to be connected to it: if necessary, it is however possible to extend the length of the panels' pipes to reach the distributors more easily.
- Le misure, le tipologie dei profili e le soluzioni di installazione indicate nel presente manuale sono puramente indicative. Esse possono variare:
 - in base alla reperibilità dei materiali in commercio;
 - in base alla professionalità e all'esperienza dell'installatore e/o del cartongessista;
 - in base alle specifiche caratteristiche delle pareti o del soffitto (es. in laterizio oppure precompresso, ecc.) sui quali si devono applicare i pannelli b!klimax;
 - in base al peso che la struttura portante deve sostenere (peso dei pannelli b!klimax, pari a circa $9,5 \text{ kg/m}^2$ + peso del rivestimento).
- RDZ non si ritiene responsabile per installazioni errate o effettuate con materiali o con modalità che non rispondano alle normative e alle prescrizioni di sicurezza in vigore nel Paese di utilizzo.
- Il posizionamento dei distributori deve sempre tenere conto della collocazione dei pannelli b!klimax che dovranno essere collegati ad essi: in caso di necessità è tuttavia possibile prolungare la lunghezza delle tubazioni dei pannelli per raggiungere i distributori più agevolmente.



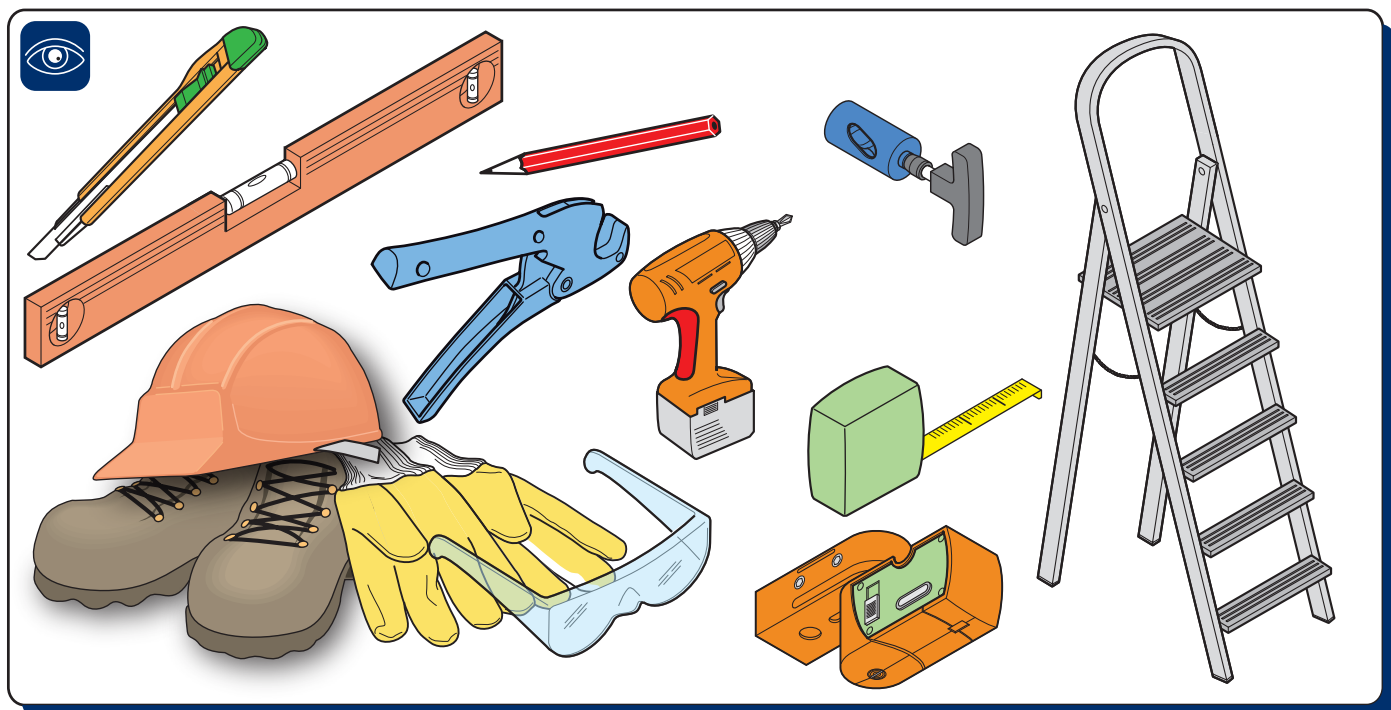
It is absolutely forbidden to use automatic fill mechanisms with b!klimax systems.



È assolutamente vietato l'uso di dispositivi di caricamento automatico dell'impianto con i sistemi b!Klimax.



NECESSARY EQUIPMENT - ATTREZZATURA NECESSARIA





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	Disposal	Smaltimento	3
	Important warnings	Avvertenze importanti	4
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REFERENCE GUIDE - GUIDA ALLA CONSULTAZIONE

3 different types of installation are illustrated in this manual:

Nel presente manuale sono illustrati 3 diversi tipi di installazione:

Type of installation	Profiles used
Ceiling	Adherent Snap Hanging snap

Tipologia di installazione	Profili utilizzabili
A soffitto	In aderenza A scatto A scatto pendinati

At the end of each type of installation a reference to other sections allows the completion of the assembly of "b!klimax" panels with the performance of hydraulic connections, testing and specific fittings for the type of installation chosen.

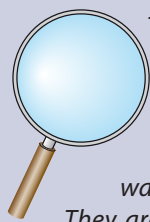
Alla fine di ogni tipologia di installazione un rimando ad altre sezioni permette di completare il montaggio dei pannelli "b!klimax" con l'esecuzione dei collegamenti idraulici, il collaudo e le finiture specifiche per la tipologia di installazione scelta.



Finish the installation by consulting the chapter(s):
Terminare l'installazione consultando i capitoli:

"Hydraulic connections"	"Collegamenti idraulici"	pag. xx
"Testing"	"Collaudo"	pag. xy
"Fittings"	"Finiture"	pag. yy

1 DESCRIPTION - DESCRIZIONE

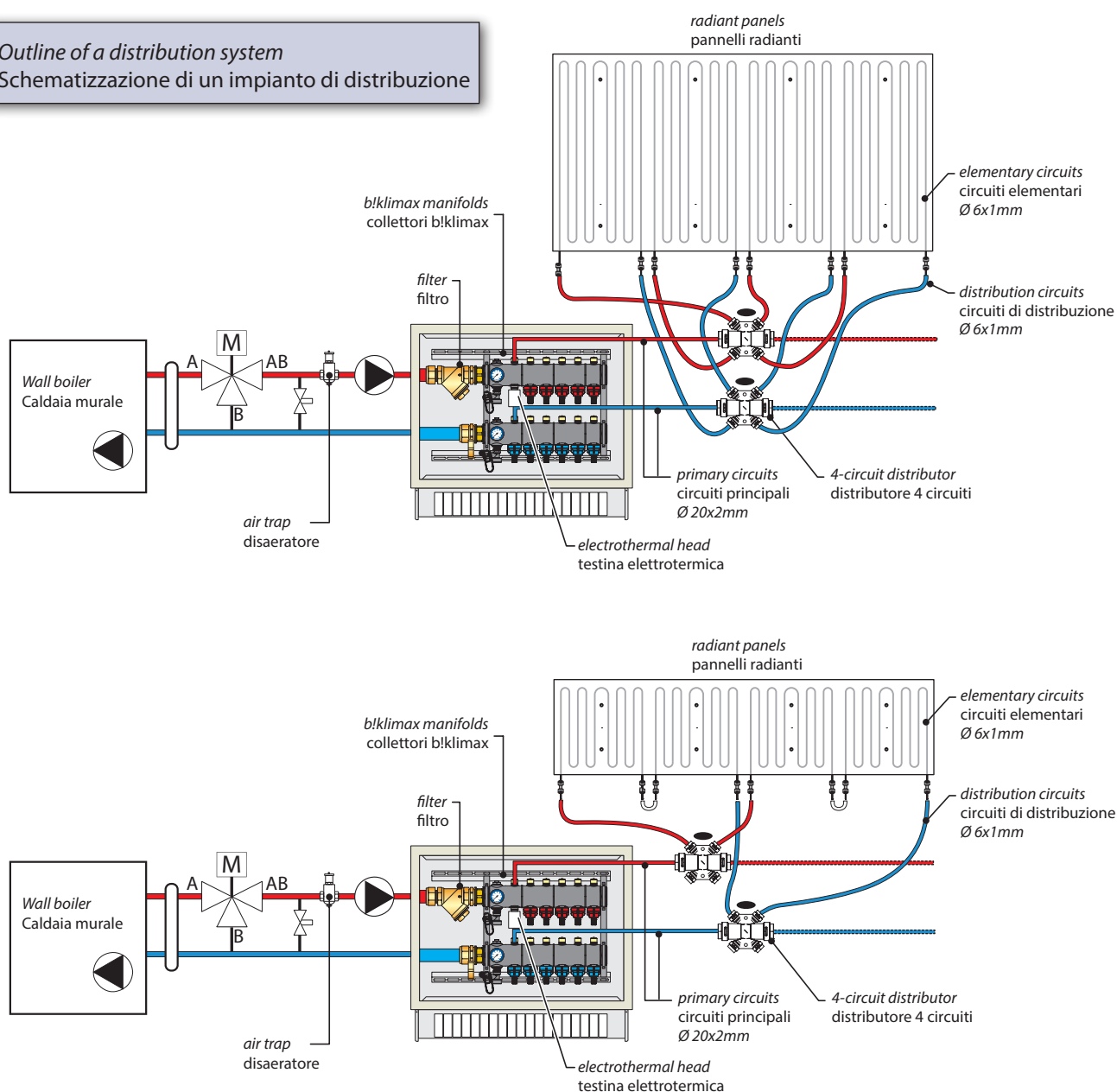


Traditional b!klimax system consists of light and handy panels, which are easy to install and guarantee greatest finishing freedom as well as high performance without thermal bridges. b!klimax panels can be mounted on walls or on the false ceiling.

They are made of moulded polystyrene, designed to accommodate PE-HDXc pipes Ø 6 mm with oxygen barrier. Panels and pipes are covered with a layer of fibrous gypsum to increase their thermal output, while the whole system can be finished with plaster or plasterboard.

Il sistema b!klimax Tradizionale è composto da pannelli radianti leggeri, maneggevoli, semplici da installare che garantiscono massima libertà di rivestimento, prestazioni elevate e assenza di ponti termici. Sono adatti ad installazioni a soffitto o a parete e sono prodotti in polistirene sagomato per poter alloggiare al loro interno le tubazioni in PE-HDXc Ø 6 mm dotate di barriera contro la diffusione dell'ossigeno. Pannelli e tubazioni sono rivestiti da uno speciale strato di massetto a base di gesso fibrorinforzato per aumentare la resa termica. Il sistema può essere rifinito con lastra di cartongesso o direttamente intonacato.

Outline of a distribution system
Schematizzazione di un impianto di distribuzione



2 UNPACKING - DISIMBALLO

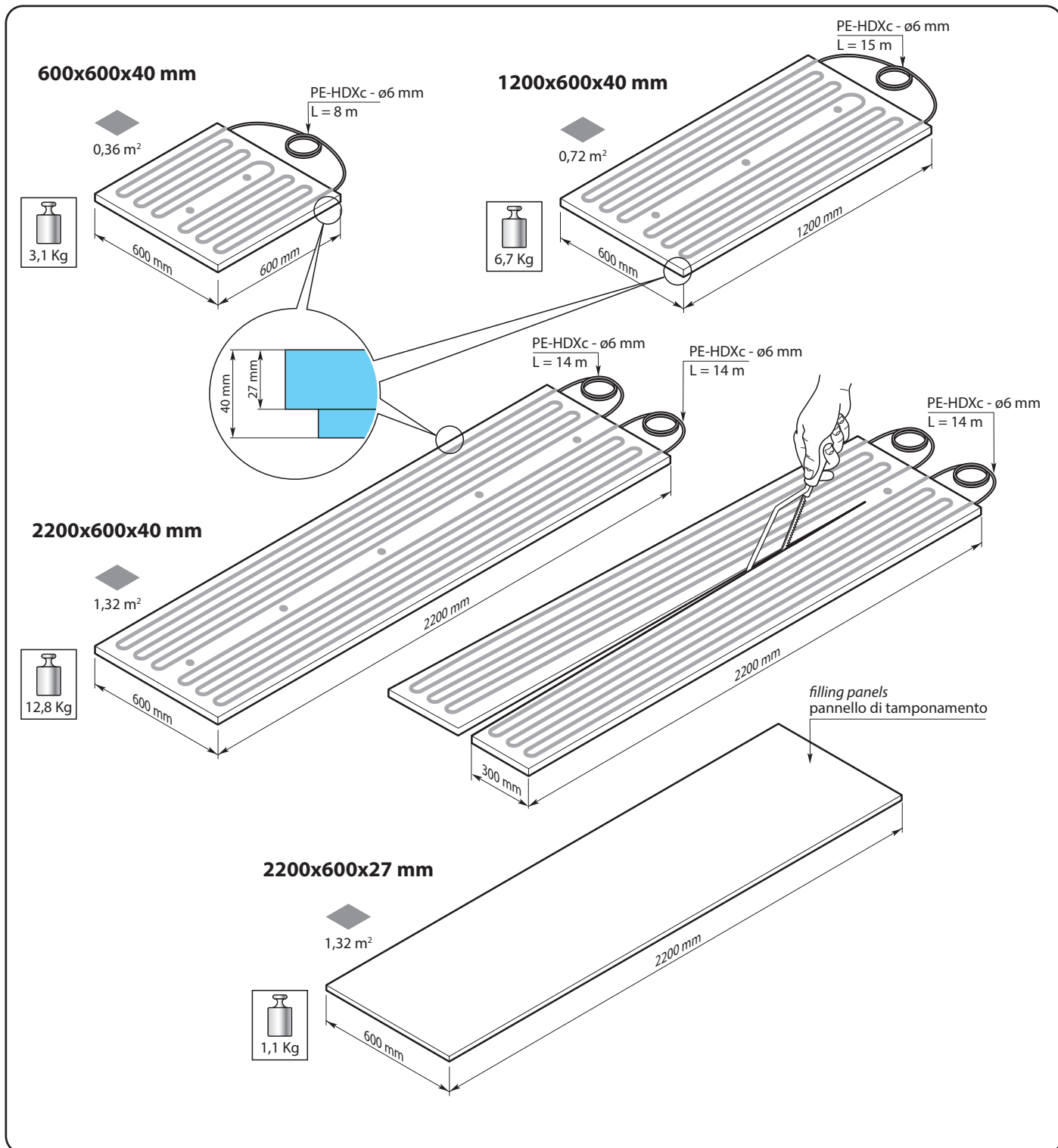
Unpack all packages and check the contents carefully: if any anomaly is noted, do not proceed with the installation, contact an Authorized Service Centre.

Disimballare tutti i colli e controllarne attentamente il contenuto: se si rilevasse qualche anomalia, non procedere nell'installazione ma contattare un Centro di Assistenza Autorizzato.

3 COMPONENTS - COMPONENTISTICA

RADIANT PANELS / FILLING PANELS

PANNELLI RADIANTI / PANNELLO DI TAMPONAMENTO



• Radiant panels

The system consists of radiant panels made of polystyrene slabs, thickness 40mm, complete with pipes $\phi 6 \text{ mm}$ made of PEHD-Xc with anti-oxygen barrier in accordance with DIN 4726. Panel and pipes are covered by a special layer of fibre-reinforced pre-plaster to increase thermal performance.

• Filling panel

Made of 27mm thick polystyrene slabs, these are necessary to fill areas not covered with radiant panels.

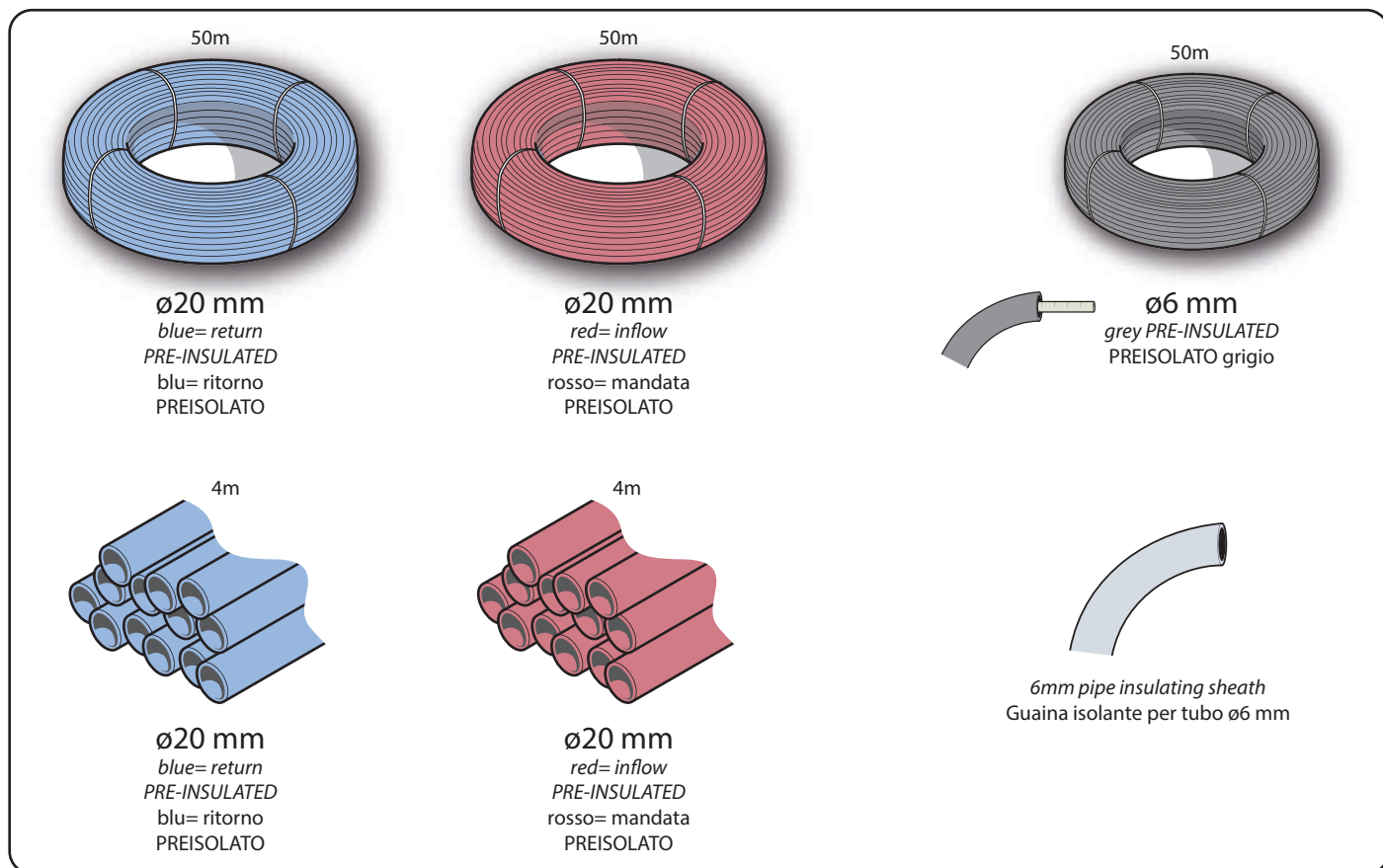
• Pannelli radianti

Il sistema è composto da pannelli radianti costruiti con lastra in polistirene, spessore 40mm, completi delle tubazioni $\phi 6 \text{ mm}$ in PEHD-Xc con barriera anti-ossigeno secondo la DIN 4726. Pannello e tubazioni sono rivestiti da uno speciale strato di pre-intonaco fibro-rinforzato per aumentarne le rese termiche.

• Pannello di tamponamento

Costruito con lastra in polistirene spessore 27mm, necessario per tamponare le aree non coperte dai pannelli radianti.

PIPES AND SHEATHS TUBI E GUAINA



- Ø 20 mm Pre-insulated PB pipe

PB pipe with oxygen barrier according to DIN 4726, Ø 20 mm, pipe insulation made of expanded polyethylene, thickness 6 mm. Reaction to fire class: BL-s1,d0. It is used to connect distributors with MAXI manifolds.

- 6 mm pre-insulated PB pipes

PB pipe Ø 6 mm with oxygen barrier according to DIN 4726, pipe insulation made of expanded polyethylene, reaction to fire class BL-s1,d0, thickness 6 mm. It is used to connect b!klimax+ and Quadrotto panels with the distributors.

- 6 mm pipe insulating sheath

Expanded elastomer with closed cells, smooth surface for thermal insulation of PB pipe Ø 6 mm. Package: 2 m.

- Tubo in PB preisolato Ø 20 mm

Tubo in PB con barriera anti-ossigeno secondo la norma DIN 4726 EN 12319-2, Ø 20 mm, rivestito con guaina isolante in polietilene espanso sp. 6 mm. Classe di reazione al fuoco: BL-s1,d0. Necessario per il collegamento dei distributori ai collettori MAXI.

- Tubo in PB preisolato Ø 6 mm

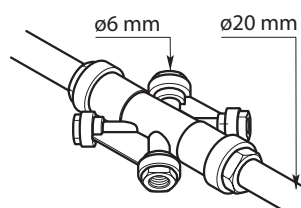
Tubo in PB Ø 6 mm dotato di barriera anti-ossigeno secondo la norma DIN 4726 EN 12319-2, Ø 6 mm, rivestito con guaina isolante in polietilene espanso sp. 6 mm, classe di reazione al fuoco BL-s1,d0. Necessario per collegare i pannelli radianti tradizionali ai distributori.

- Guaina isolante per tubo da 6 mm

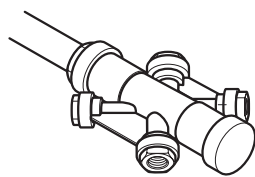
In elastomero espanso a celle chiuse, liscia in superficie, per l'isolamento termico del tubo in PB Ø 6 mm Viene venduta in elementi da 2 m.



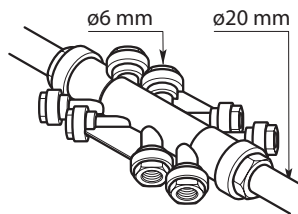
DISTRIBUTORS AND ANTI-CONDENSATION SHELLS DISTRIBUTORI E GUSCI ANTICONDENSA



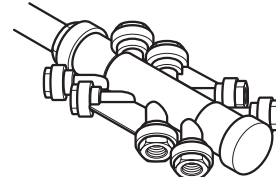
4 outlets - open distributor
Distributore 4 vie passante



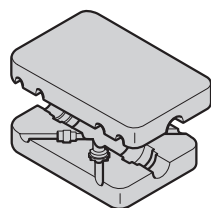
4 outlets - closed distributor
Distributore 4 vie terminale



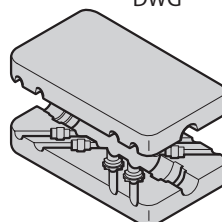
8 outlets - open distributor
Distributore 8 vie passante



8 outlets - closed distributor
Distributore 8 vie terminale



Polystyrene or expanded polyethylene
anticondensation shells
Gusci anticondensa in
polistirene o in polietilene espanso



Polystyrene or expanded polyethylene
anticondensation shells
Gusci anticondensa in
polistirene o in polietilene espanso

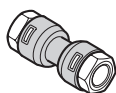
• Distributors

Pair of distributors made of plastic, specially shaped to guarantee easy connection with the pipes coming from b!klimax panels. These distributors are provided with anticondensation shells made of polystyrene or expanded polyethylene BL-s1,d0, push-fit pipe fittings for pipes Ø 6 mm and Ø 20 mm, and closing plastic bands. Available version: 4-way or 8-way open and closed distributors.

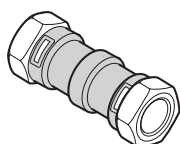
• Distributori

Coppia di distributori costruiti in materiale plastico, appositamente conformati per garantire un facile inserimento della tubazione dei pannelli b!klimax. I distributori sono dotati di gusci anticondensa disponibili con isolamento in polistirene o in polietilene espanso BL-s1,d0, raccordi ad innesto rapido per il tubo da 6 mm e per quello da 20 mm e fascette di chiusura. Modelli disponibili: a 8 e a 4 vie passanti e terminali.

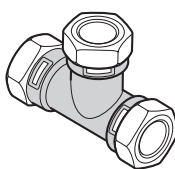
PUSH-FIT FITTINGS RACCORDI RAPIDI



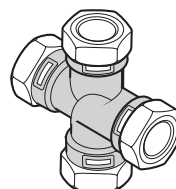
Ø 6 mm double
Doppio Ø 6 mm



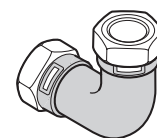
Ø 20 mm double
Doppio Ø 20 mm



Ø 20 mm Tee
Tee Ø 20 mm



Ø 20 mm Cross
a Croce Ø 20 mm



Ø 20 mm elbow
Curvo Ø 20 mm

• Ø 6 mm Straight Push-fit Fitting

Used to lengthen 6mm piping and to place 600x600 mm panels in series

• Ø 20 mm Straight Push-fit Fitting

Used to lengthen the distribution line with 20mm piping

• Ø 20mm TEE push-fit fitting

Used to split the distribution lines with 20mm piping

• Ø 20 mm Cross push-fit fitting

Used to split the distribution lines with 20mm piping

• Ø 20 mm Elbow push-fit fitting

Used for transferring by 90° 20mm pipe in bars

n.b.: All fittings are provided with anticondensation shells made of polystyrene or expanded polyethylene BL-s1

• Raccordo rapido dritto da Ø 6 mm

Raccordo rapido dritto per allungare il tubo da 6 mm o per mettere in serie due pannelli da 600x600 mm.

• Raccordo rapido dritto da Ø 20 mm

Raccordo rapido dritto per allungare la linea di distribuzione con il tubo da 20mm.

• Raccordo rapido a TEE da Ø 20 mm

Si utilizza per sdoppiare le linee di distribuzione con il tubo da 20mm.

• Raccordo rapido a croce da Ø 20 mm

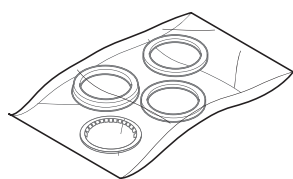
Si utilizza per sdoppiare le linee di distribuzione con il tubo da 20mm.

• Raccordo rapido curvo da Ø 20 mm

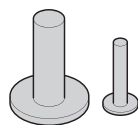
Si utilizza per eventuali spostamenti a 90° del tubo da 20mm in barre.

n.b.: Tutti i raccordi sono dotati di gusci anticondensa disponibili con isolamento termico in polistirene o in polietilene espanso classe BL-s1,d0.

INSTALLATION ACCESSORIES COMPLEMENTI DI INSTALLAZIONE



Ø 6mm and 20mm piping
junction kit bags
Sacchetto kit giunzione
ø6mm e ø 20mm



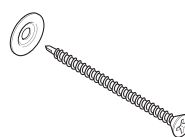
Ø 6mm e ø 20mm plug
Tappi da ø 6mm e ø 20mm



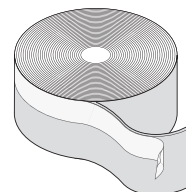
Industry system elbow
Curva Industry System



Lubricant for push-fit fitting
Lubrificante per raccordi rapidi



Screw and Washer
Vite e Rondella



b!klimax perimeter belt
Cornice perimetrale b!klimax

- Ø 6 and 20mm piping junction kit bags
O-ring and sealant for push-fit pipe fitting recovery

- Ø 6 and Ø 20mm Closing Plugs for Outlets
They are used to close the outlet of a distributor.

- Industry system elbow
Elbow for 90° shifting with PB pipes Ø 20 mm.

- Lubricant for push-fit pipe fittings:
Used to guarantee better insertion of the pipes into the pipe fittings and better preservation for O-rings.

- Screw and Washer
55-mm screws and washers made of stainless steel. They are used to fix b!klimax panels to the metal grid.

- b!klimax Perimeter Belt
Edge insulation for b!klimax and b!klimax+ ceiling systems, made of closed-cell expanded polyethylene. It acts as thermo-acoustic insulation and it absorbs plasterboard ceiling expansions.

- Sacchetto Kit giunzione per tubo da Ø 6 e 20mm
Contenente O-ring e anello di tenuta per ripristino giunzione di raccordo ad innesto rapido.

- Tappi di chiusura da Ø 6 e Ø 20mm
Utili qualora si debba chiudere un'uscita sul distributore.

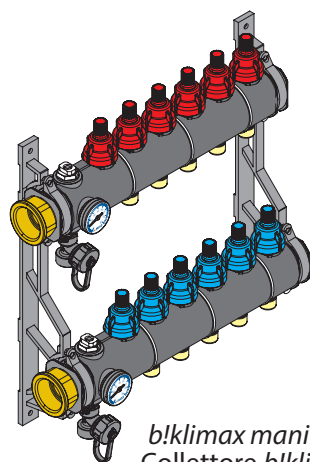
- Curva Industry System
Curva per eventuali spostamenti a 90° del tubo in PB Ø 20 mm.

- Lubrificante per raccordi rapidi
Lubrificante per raccordi rapidi, consigliato per garantire un migliore inserimento della tubazione nei raccordi e un miglior mantenimento degli O-ring.

- Vite e Rondella
Vite lunghezza 55 mm e rondella in acciaio zincato per il fissaggio dei pannelli b!klimax ai profili metallici.

- Cornice perimetrale b!klimax
Cornice perimetrale per sistema radiante a soffitto b!klimax e b!klimax+. Realizzata in polietilene espanso elasticizzato a celle chiuse con funzione di isolamento termico e acustico e per le dilatazioni del rivestimento in cartongesso.

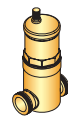
BIKLIMAX MANIFOLD COMPONENTS COMPONENTI DI UN COLLETTORE B!KLIMAX



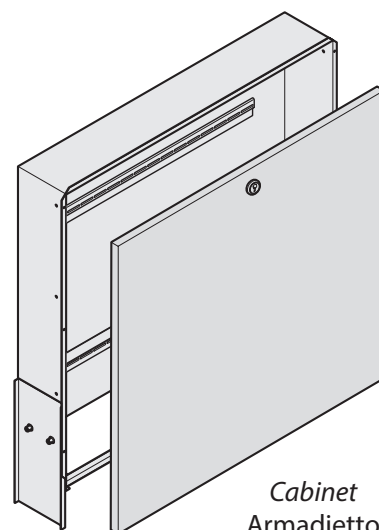
b!klimax manifold
Collettore b!klimax



Electrothermal head
Testina elettrotermica



Air trap
Degasatore



Cabinet
Armadietto

• b!klimax Manifolds

b!klimax manifold, Ø 1 1/4", made of plastic material, ideal for high flow-rate. It is equipped with shut-off valves, which can be combined with electrothermic heads controlled by a thermostat, air vent and discharge valves, thermometers on inflow and return flow, fixing brackets, Y filter and push fit fitting with key sliding for pipe Ø 20 mm. It can be installed with the pipes upwards or downwards. Anticondensation shells are supplied as standard.

• Electrothermal head

Electrothermic servocontrol to manage each circuit through room thermostat. It is provided with limit microswitch, and it can be installed in any position, even upsidedown. Display of the functioning mode (open/close), easy installation thanks to fast hooking adapter (supplied as standard). Input 230 V with and without limit microswitch. Degree of protection IP 54. It can be used with CONTROL, TOP-COMPOSIT and b!klimax manifolds.

• Air trap

The air separator is made of brass, and it is used to collect the air that accumulates in the hydraulic circuit so that it can be eliminated. It is a necessary component in b!klimax and b!klimax+ systems, but it is recommended also in the other systems. FF (female - female) pipe connections.

• Cabinet for b!klimax manifold

This cabinet made of zinc-plated sheet iron is used to contain b!klimax manifolds. There are suitable outlets for pipes both upwards and downwards. The cabinet is equipped with a protective cover for plaster, a white metal door painted with epoxy powders, and lockset.

• Collettori b!klimax

Collettore b!klimax attacco F da 1 1/4" in materiale plastico, studiato per elevate portate. Dotato di valvole termostattizzabili e di intercettazione, valvole di sfiato e scarico impianto, termometri in andata e ritorno, staffe di fissaggio, filtro a Y e raccordi rapidi con scorrimento a pulsante per il tubo da Ø 20. Il collettore b!klimax può essere installato con partenza dei tubi verso il basso o verso l'alto. Il collettore viene fornito completo di gusci anticondensa.

• Testina Elettrotermica

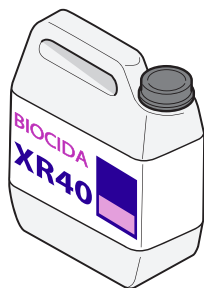
Testina elettrotermica per comando del singolo circuito tramite termostato ambiente. Può essere installata anche capovolta. Visualizzazione dello stato di funzionamento (aperta/chiusa), facilità di montaggio grazie al sistema di aggancio rapido tramite adattatore (compreso). Funzionamento: 230 V con e senza micro di fine corsa. Grado di protezione IP 54 (in tutte le posizioni). Utilizzabile con i collettori CONTROL, TOP-COMPOSIT e b!klimax.

• Separatore di microbolle

Separatore di microbolle costruito in ottone per la disaerazione degli impianti. Obbligatorio nei sistemi radianti a soffitto b!klimax e b!klimax+, consigliato negli altri sistemi. Attacchi FF.

• Armadietto collettore b!klimax

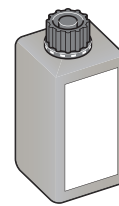
Armadietto realizzato in lamiera zincata, per l'alloggiamento dei collettori b!klimax. Predisposto per l'uscita dei tubi sia verso l'alto che verso il basso. Dotato di coperchio di protezione per intonaci e portina metallica verniciata a polveri di colore bianco con serratura.



Biocide XR40
Biocida XR40



Inhibitor XR20
Inibitor XR20



Retard 180M
Retard 180M

• **BIOCIDE XR40**

Sanitiser and Biocide provides protection for surface heating and cooling systems against bacterial and fungal contamination. Such contamination can cause blockages in some parts of the installation, for example in the pipes, manifolds, valves or heat exchanger. Non-corrosive substance, easy and quick to dose. Biocide XR40 is compatible with Inhibitor XR20, and they shall be both used at first fill of the radiant system in the primary circuit. Dosage: 1% of the water contained in the system. Package: 3 L.

• **INHIBITOR XR20**

The inhibiting treatment provides protection for heating systems against corrosion. It can be used in installations with aluminium components, and it is suitable for any kind of installation. Dosage: 2% of the water contained in the system. Package: 3-10 L.

• **RDZ RETARD 180 M**

Retarder for gypsum plaster applications and bonding agents. Dosage: 0.5% of the water necessary to dilute the bonding agent (100 g in 20 L of water or 1 can every 50 m²). Recommended with traditional b!klimax panels.

• **Gypsum-based glue (not supplied by RDZ)**

Acrylic (insulating) primer (not supplied by RDZ), suitable for all surfaces of gypsum.

• **BIOCIDA XR40**

Sanitizzante e biocida stabilizzato per preservare nel tempo l'efficienza dell'impianto radiante eliminando il rischio di proliferazione di organismi, quali batteri e funghi, che possono causare l'ostruzione di alcune parti del sistema come tubazioni, collettori, valvole e scambiatori di calore. Non corrosivo, sicuro da maneggiare e compatibile con l'impiego di Inibitor XR20, Biocida XR40 deve essere aggiunto nel circuito primario durante le operazioni di riempimento. Dosaggio: 1% sull'acqua dell'impianto. Confezione: 3 L.

• **INHIBITOR XR20**

Additivo per impianti di riscaldamento. Trattamento preventivo contro incrostazioni delle parti metalliche, applicabile anche in impianti con componenti in alluminio. Adatto a tutti gli impianti. Dosaggio al 2% sull'acqua dell'impianto. Confezione: 3-10 L.

• **RDZ RETARD 180 M**

Additivo ritardante di presa per gessi e collanti. Dosaggio consigliato 0.5% sulla quantità di acqua necessaria per impastare la colla (100 g. su 20 L d'acqua oppure 1 conf. ogni 50 m²). Consigliato sui pannelli b!klimax tradizionali.

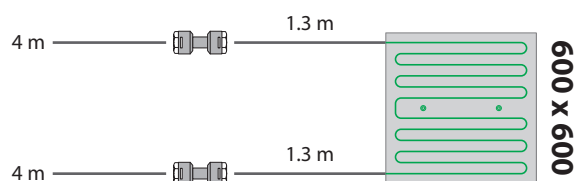
• **Colla a base di gesso (non fornita da RDZ)**

Primer acrilico (isolante) (non fornito da RDZ), adatto a tutte le superfici a base di gesso.

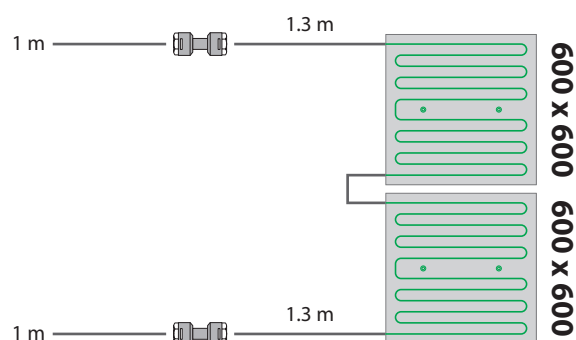
4 CONNECTION EXAMPLES - ESEMPI DI COLLEGAMENTO

Possibility of extending the circuits of b!klimax panels
Possibilità di allungo dei circuiti dei pannelli b!klimax

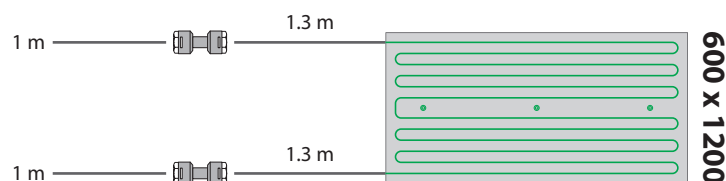
1/2 Elementary circuit
1/2 Circuito elementare



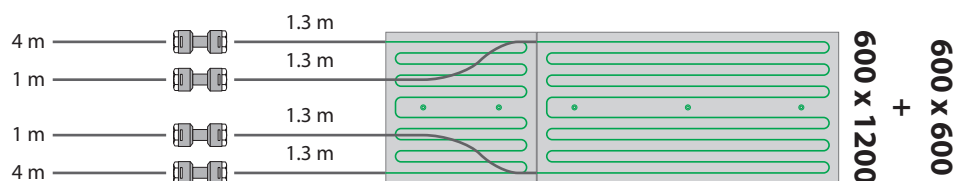
1 Elementary circuit
1 Circuito elementare



1 Elementary circuit
1 Circuito elementare



**1 Elementary circuit +
1/2 Elementary circuit**
**1 Circuito elementare +
1/2 circuito elementare**

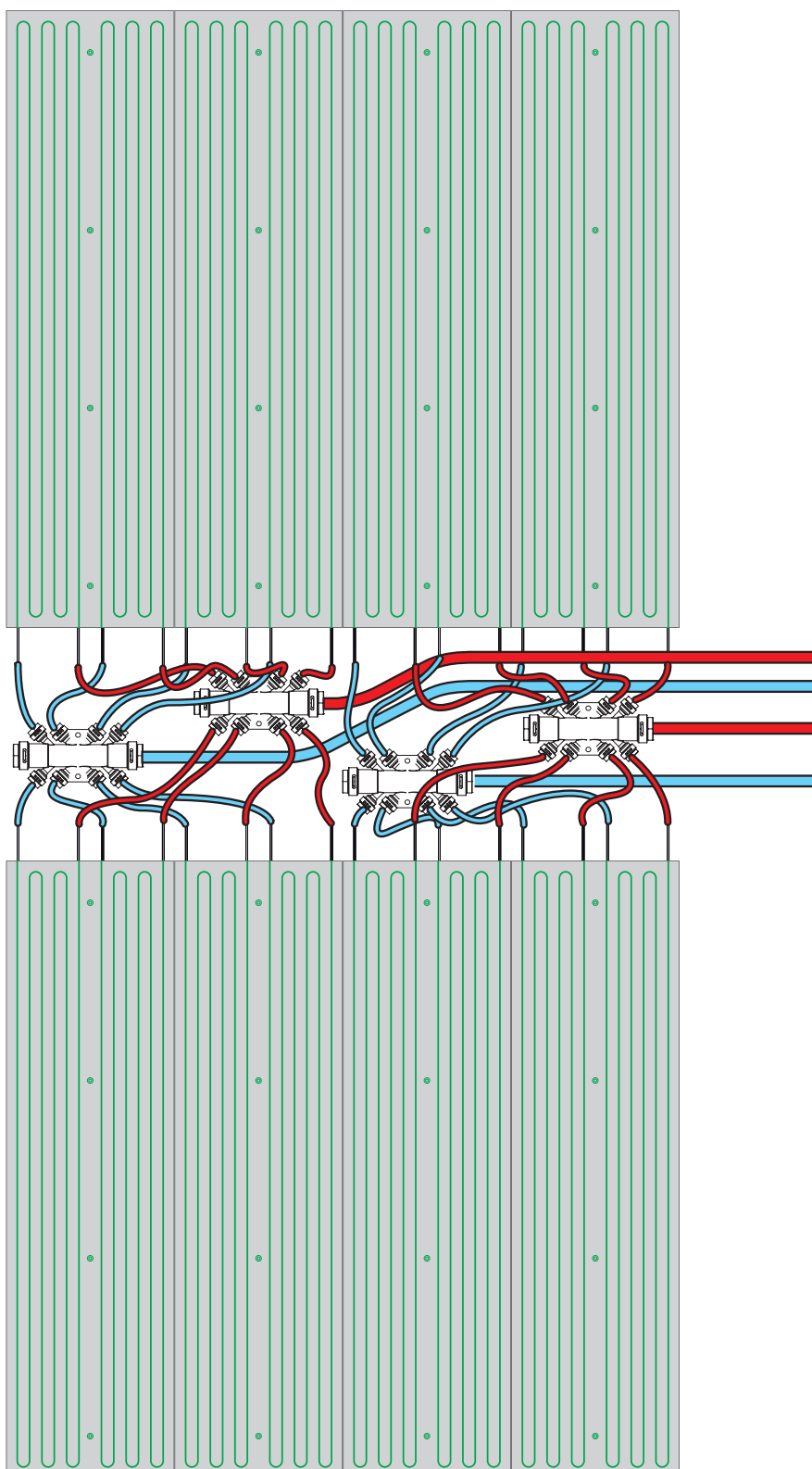


2 Elementary circuits
2 Circuiti elementari



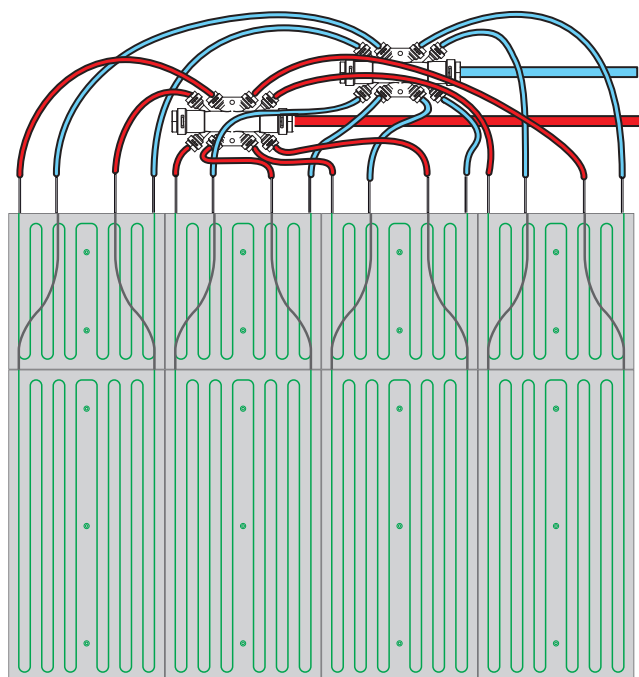
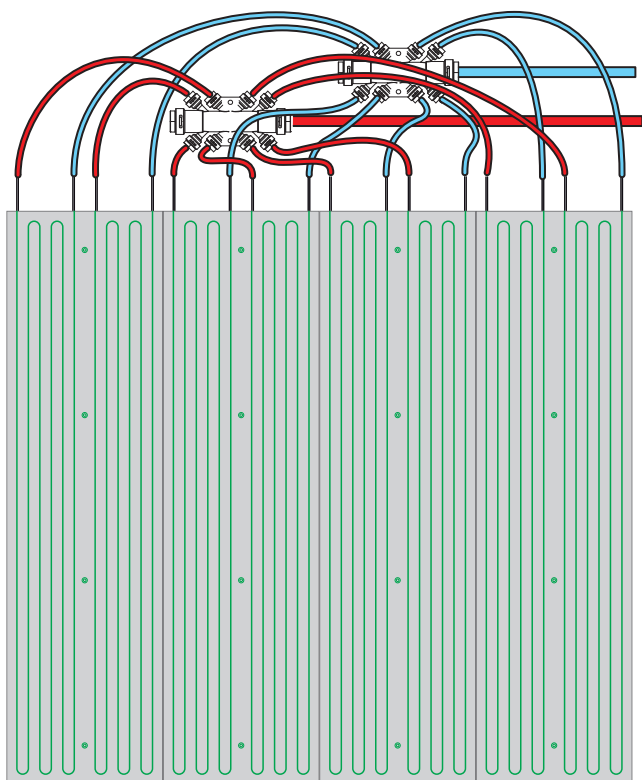


Illustrative examples of connections for 2200 panels on opposite sides
Esempi indicativi di collegamenti per pannelli da 2200 contrapposti

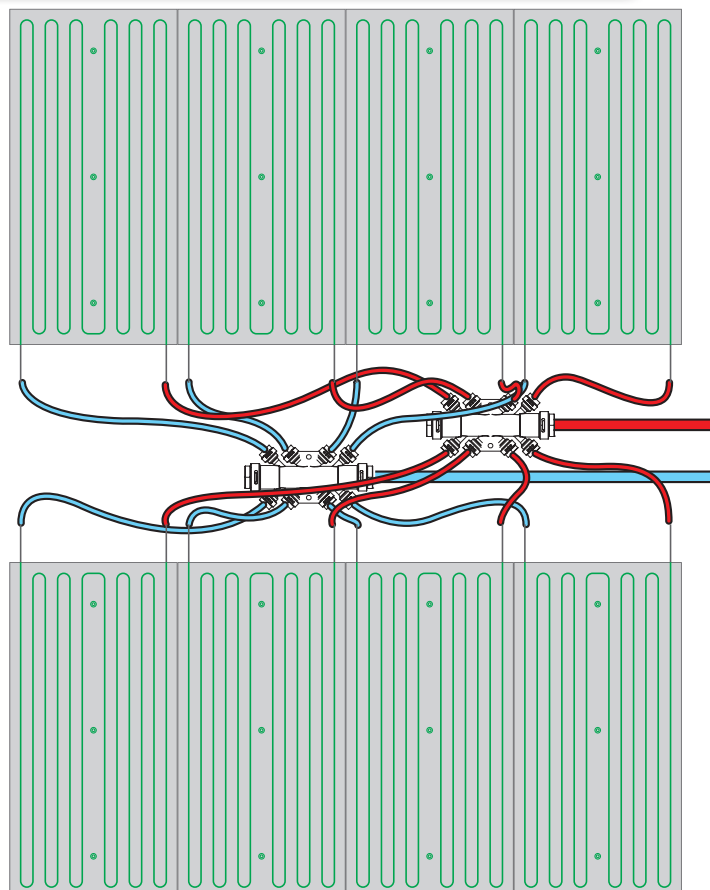




Illustrative examples of connections for 2200mm and 600+1200 mm panels
Esempi indicativi di collegamento per pannelli da 2200mm e da 600+1200mm

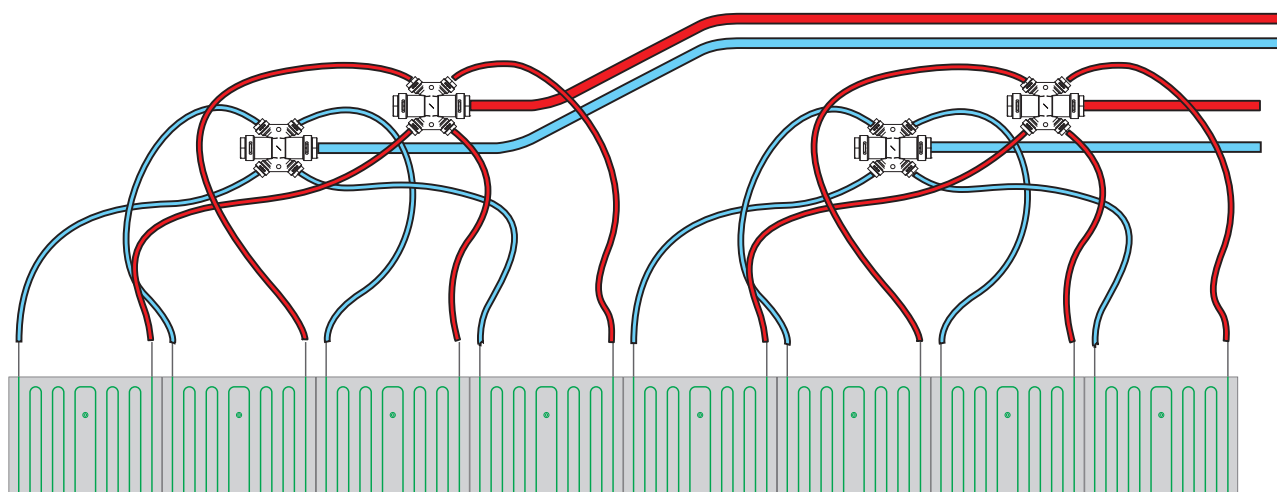


Illustrative examples of connections for 1200 panels on opposite sides
Esempi indicativi di collegamenti per pannelli da 1200 contrapposti

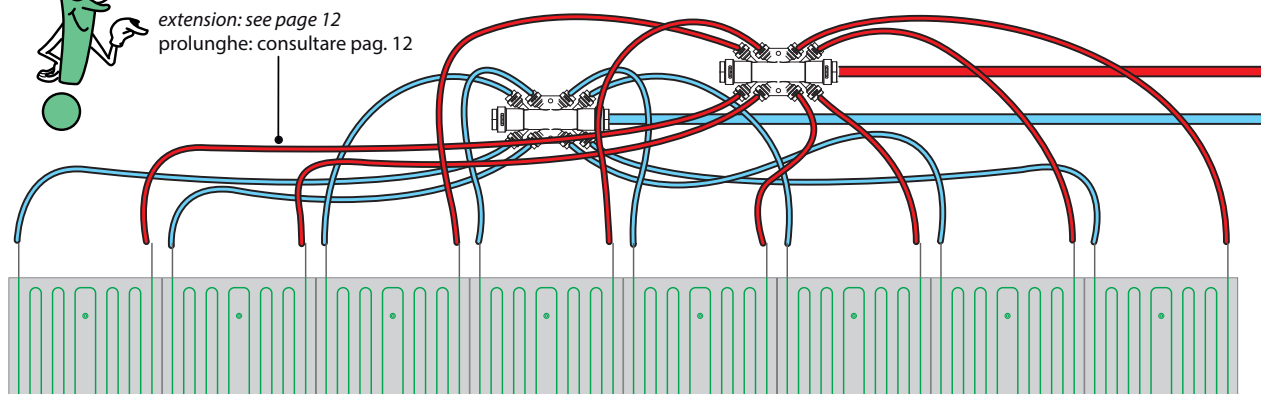




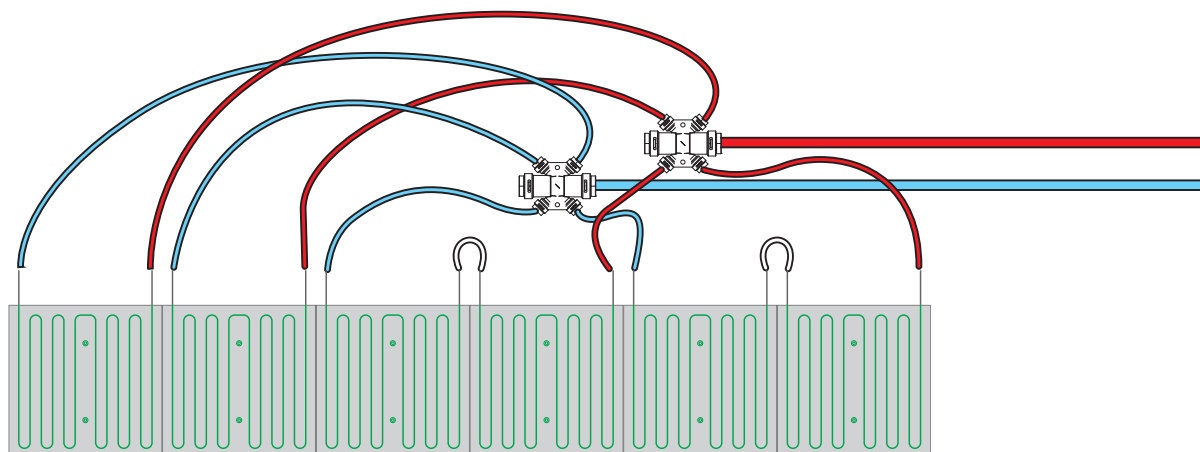
Illustrative examples of connections for 1200mm panels
Esempi indicativi di collegamento per pannelli da 1200mm



extension: see page 12
prolunghe: consultare pag. 12

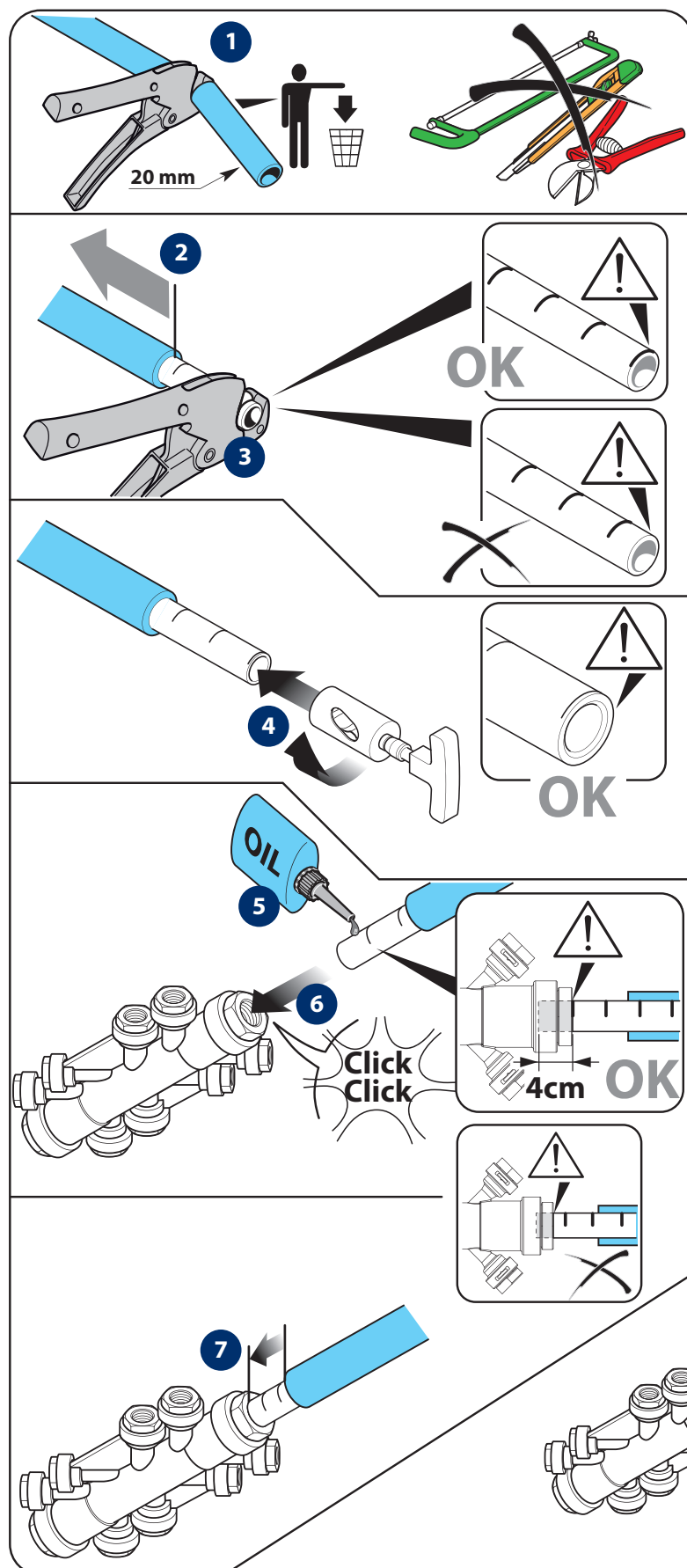


Illustrative examples of connections for 600mm panels in series or parallel ones
Esempi indicativi di collegamento per pannelli da 600mm in serie o parallelo



5 NOTES FOR CONNECTIONS - AVVERTENZE PER I COLLEGAMENTI

Important notes about connections for **20-mm** pipes
Avvertenze per i collegamenti con tubo da **20mm**



1 Cut the exceeding sheath by using a pipe cutter

Tagliare la guaina in eccesso utilizzando una forbice tagliatubo.

2 Make the sheath run over the pipe and move it away from the cut.

Far scorrere la guaina lungo il tubo allontanandola dal punto di taglio.

3 Cut the pipe on the tally mark; in this way you can easily check the right installation of the pipe (see stages 5-6).

Tagliare la tubazione in corrispondenza della linea indicativa in modo da facilitare la verifica di corretto inserimento (vedi sequenza 5-6).

4 Use a pipe flaring tool in order to make pipe connection easier

Svasare il tubo con il calibratore in modo da facilitare l'inserimento nel raccordo

5 Use oil inside and outside the pipe in order to make the introduction into the pipe fitting easier.

Oliare la tubazione sia internamente che esternamente in modo da facilitare l'inserimento nel raccordo.

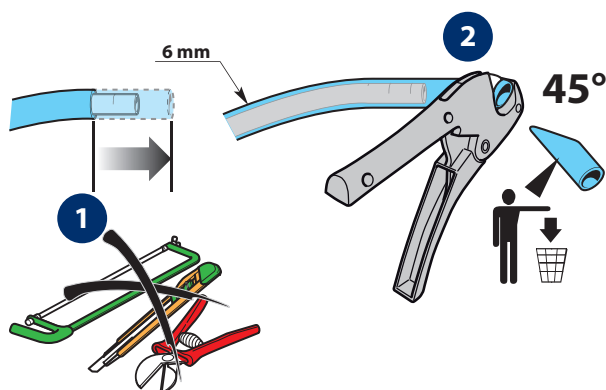
6 Introduce the pipe, making sure that the next mark coincides with the fitting edge.

7 Inserire la tubazione verificando che la linea successiva a quella precedentemente tagliata coincida con il bordo del raccordo.

Check the right installation of the pipe into the fitting by pressing it out softly.

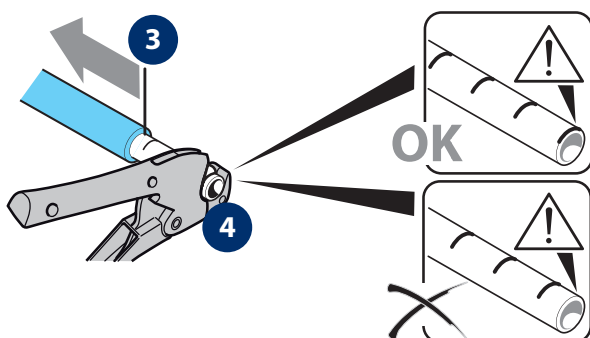
8 Verificare la corretta installazione del tubo nel raccordo con una leggera pressione di estrazione.

Important notes about connections for 6-mm pipes
 Avvertenze per i collegamenti con tubo da 6mm



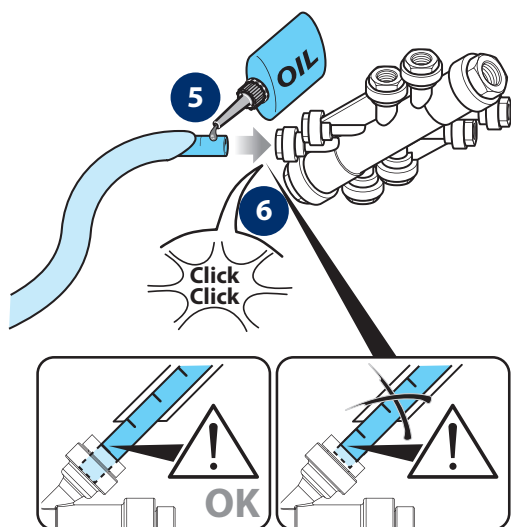
Cut the exceeding sheath by using a pipe cutter; the cut should be done with 45° inclination.

- 1
- 2 Tagliare la guaina in eccesso utilizzando una forbice tagliatubo; il taglio deve essere effettuato a circa 45°.



Make the sheath run over the pipe and move it away from the cut.

- 3
- 4 Far scorrere la guaina lungo il tubo allontanandola dal punto di taglio.

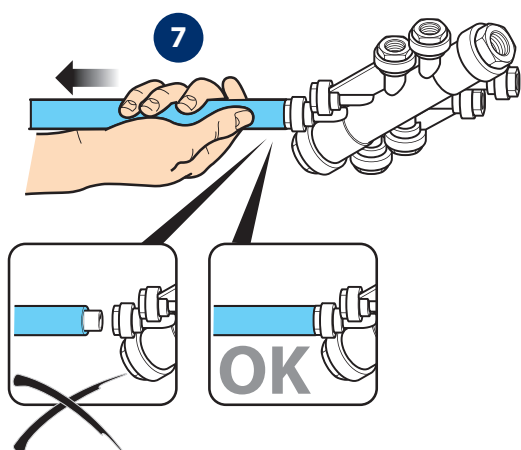


Cut the pipe on the tally mark; in this way you can easily check the right installation of the pipe (see stages 6).

- 4
- 5
- 6 Tagliare la tubazione in corrispondenza della linea indicativa in modo da facilitare la verifica di corretto inserimento (vedi sequenza 6).

Use oil inside and outside the pipe in order to make the introduction into the pipe fitting easier.

- 5
- 6 Oliare la tubazione sia internamente che esternamente in modo da facilitare l'inserimento nel raccordo.



Introduce the pipe, making sure that the next mark coincides with the fitting edge.

- 6
- 7 Inserire la tubazione verificando che la linea successiva a quella precedentemente tagliata coincida con il bordo del raccordo.

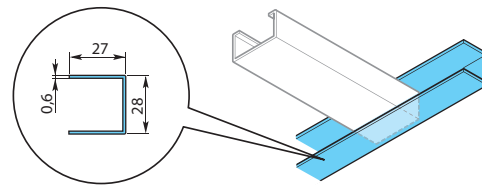
Check the right installation of the pipe into the fitting by pressing it out softly.

- 7
- Verificare la corretta installazione del tubo nel raccordo con una leggera pressione di estrazione.

Guide for perimeter walls / Guida per pareti perimetrali

The guide is fastened over the entire perimeter of the room; the pillars rest on its inner area on two opposite sides.

La guida viene fissata al perimetro della stanza; al suo interno su due lati contrapposti poggiano i montanti.



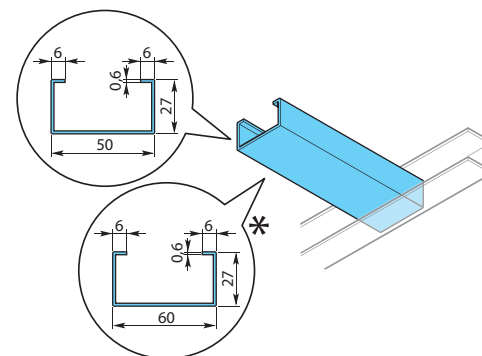
Profile for false walls and false ceilings / Profilo per contropareti e controsoffitti

This type of profile composes the framework necessary to support b!klimax panel.

La tipologia di profilo costituisce l'intelaiatura atta a supportare il pannello b!klimax.

* The examples mentioned in this manual refer to a structure with 50-mm profile, as this is the most popular in Italy; however b!klimax panel can also support 60-mm structures

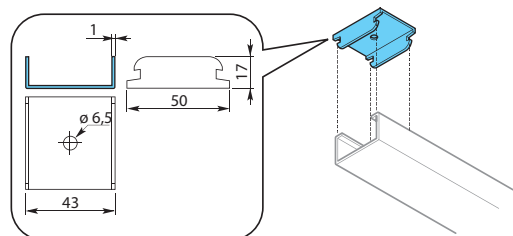
* Negli esempi del manuale è stata ipotizzata una struttura con profilo da 50mm, essendo la più usata in Italia; il pannello b!klimax può comunque supportare anche strutture da 60mm



Fixing clips / Cavalieri di fissaggio

Supports for profiles: they must be used in accordance with the manufacturer's instructions (plasterboard weight + b!klimax panels weight, they weigh about 9,5 kg/m²).

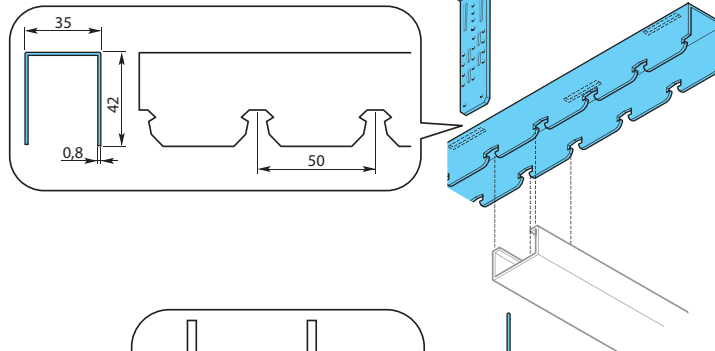
Sostengono i profili: il loro utilizzo deve seguire le indicazioni del produttore (devono poter sostenere la lastra in cartongesso oltre al peso del pannello b!klimax che è di circa 9,5 kg).



Snap profiles / Profili a scatto

They support the interaxial load bearing columns according to the structure yield that must be calculated according to the manufacturer's instructions (plasterboard weight + b!klimax panels weight, they weigh about 9,5 kg/m²).

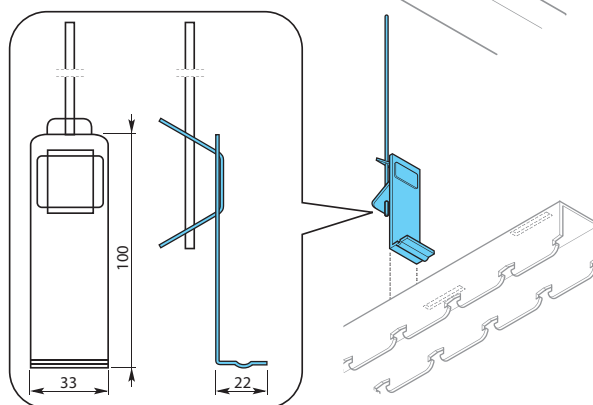
Sostengono i montanti interassati in base alla portata della struttura che deve essere calcolata seguendo le indicazioni del produttore (devono poter sostenere la lastra in cartongesso oltre al peso del pannello b!klimax che è di circa 9,5 kg/m²).



Hook for snap profile with spring / Gancio profilo a scatto con molla

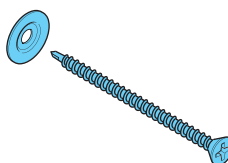
Hook with an adjustable spring connected to a snap profile with a suspension rod Ø 4mm.

Gancio con molla regolabile: collega il profilo a scatto con il pendino Ø 4mm.



55mm self-perforating phosphate screw and countersunk stainless steel washer

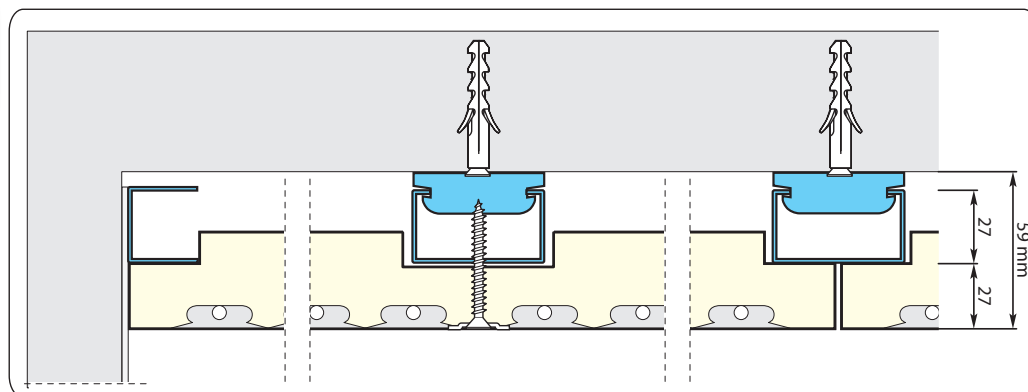
Viti autoperforanti fosfatate 55 mm e rondella inox svasata



Sizes and types of profiles shown are purely by way of example. Le misure e le tipologie dei profili rappresentati hanno valore puramente indicativo.

7 STRUCTURE EXAMPLE - ESEMPI DI STRUTTURE

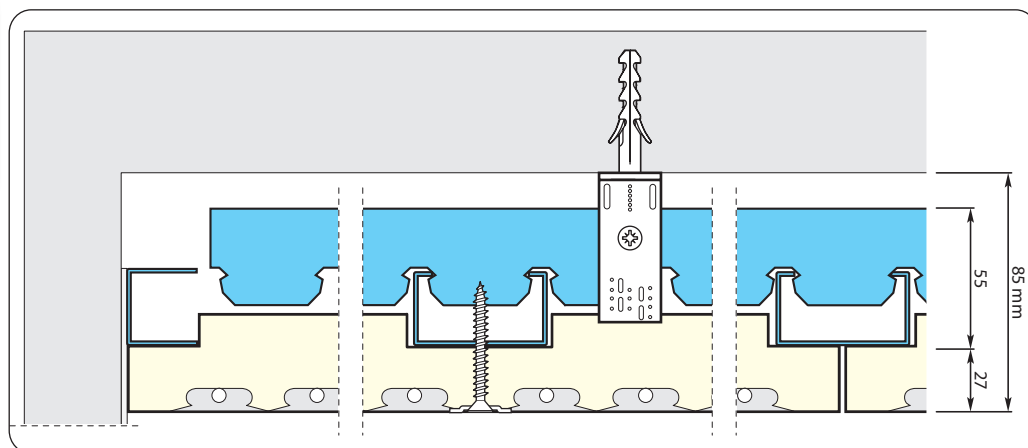
Adherent structure
Struttura in aderenza



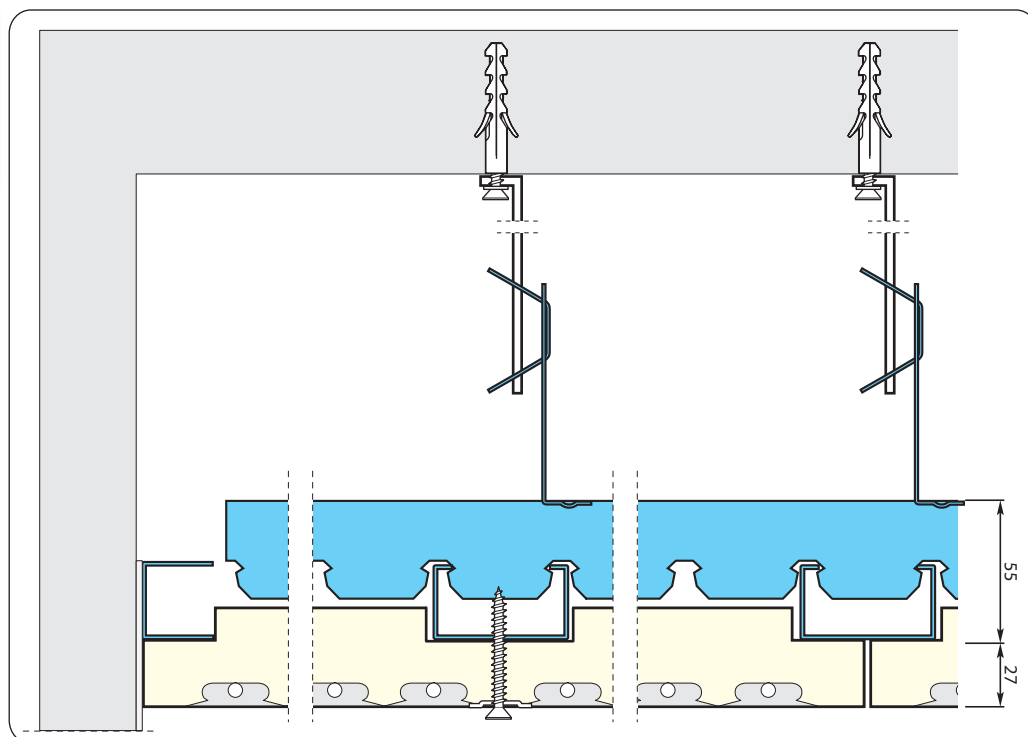
Use an adherent structure only where minimal overall thickness is required. The use of this type of structure involves longer installation than an "orthogonal" structure type.

Si consiglia l'utilizzo della struttura in aderenza solo dove viene richiesto il minimo spessore d'ingombro. L'utilizzo di questa tipologia di struttura comporta un impiego di tempo maggiore per il montaggio rispetto ad una struttura tipo "ortogonale".

Snap structure
(RECOMMENDED)
Struttura con profilo a scatto (CONSIGLIATA)



Hanging structure
(RECOMMENDED)
Struttura pendinata (CONSIGLIATA)



8 CEILING INSTALLATION - INSTALLAZIONI A SOFFITTO

The main types of structures suitable for ceiling radiant panels are:

- Adherent structures
- Snap structures (adherent or hanging)

Le principali tipologie di strutture adatte per fissare a soffitto i pannelli radianti sono:

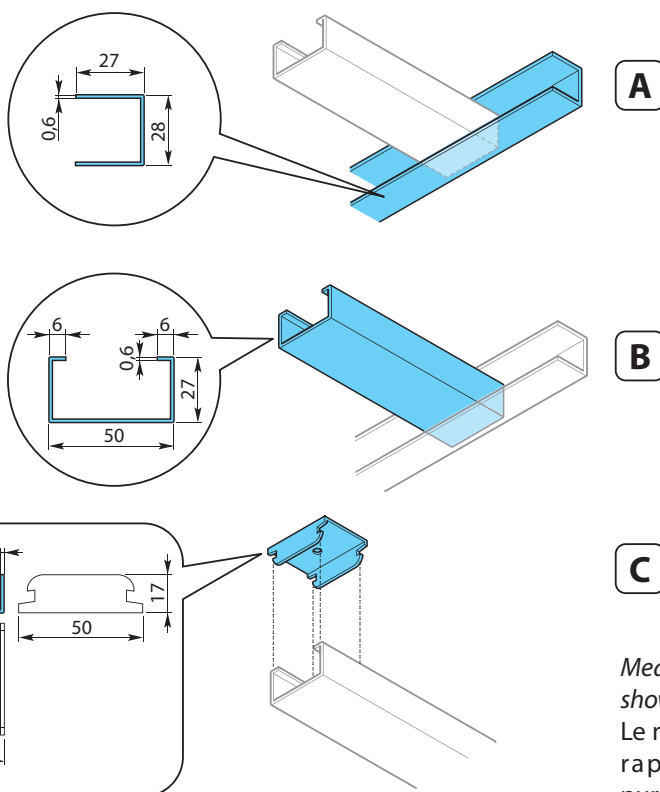
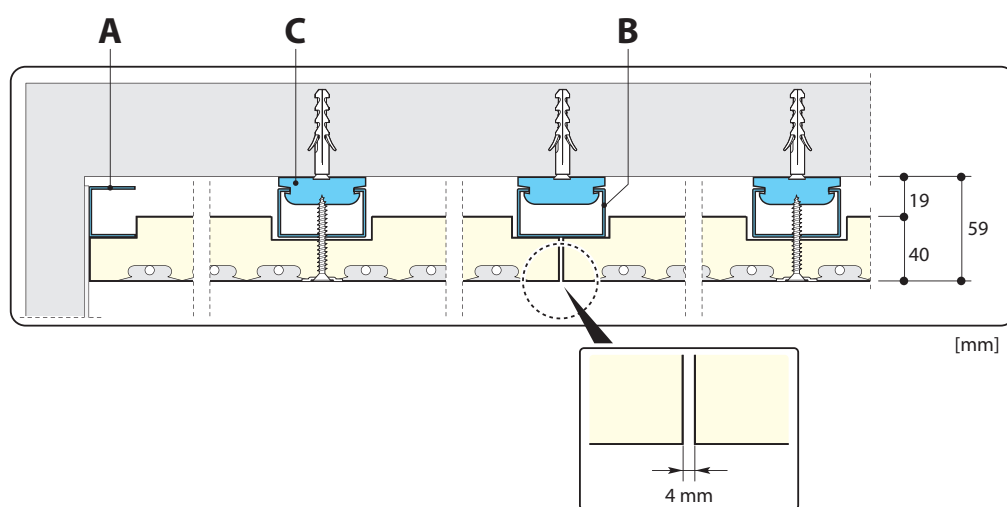
- Struttura in aderenza
- Struttura a scatto (in aderenza o pendinata)

8.1 ADHERENT STRUCTURES - STRUTTURA IN ADERENZA

Use an adherent structure only where minimal overall thickness is required. The use of this type of structure involves longer installation than an "orthogonal" structure type.

Si consiglia l'utilizzo della struttura in aderenza solo dove viene richiesto il minimo spessore d'ingombro. L'utilizzo di questa tipologia di struttura comporta un impiego di tempo maggiore per il montaggio rispetto ad una struttura tipo "ortogonale".

Adherent structure- components used
Struttura in aderenza - componenti utilizzati

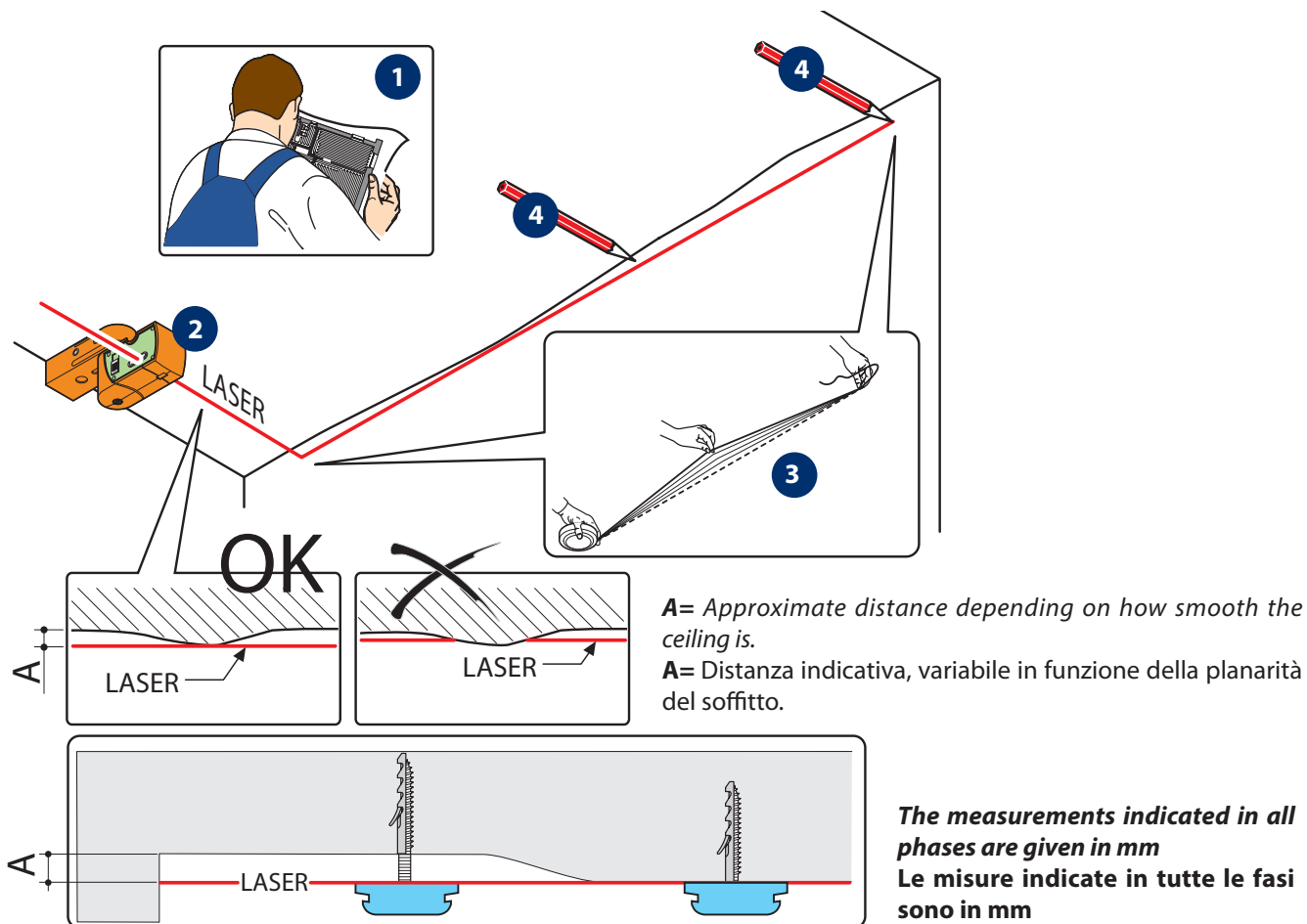


Measurements and types of profiles shown are purely by way of example. Le misure e le tipologie dei profili rappresentati hanno valore puramente indicativo.



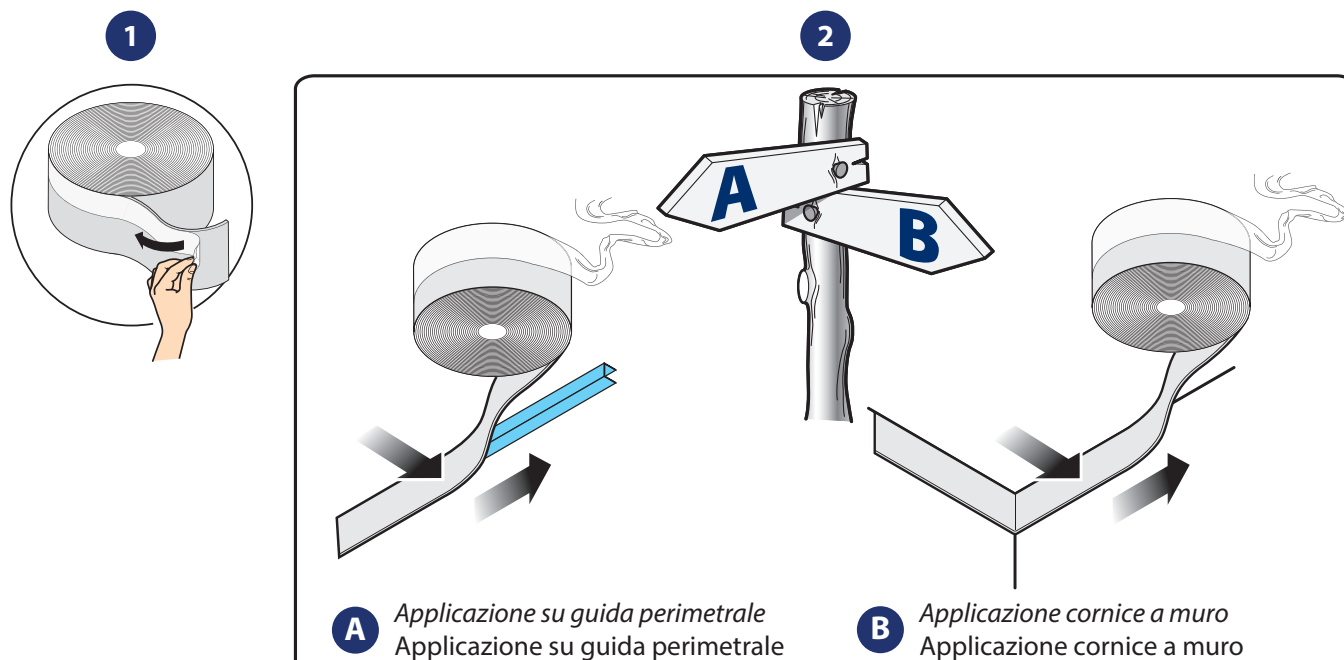
1

PERIMETER GUIDE INSTALLATION INSTALLAZIONE GUIDE PERIMETRALI

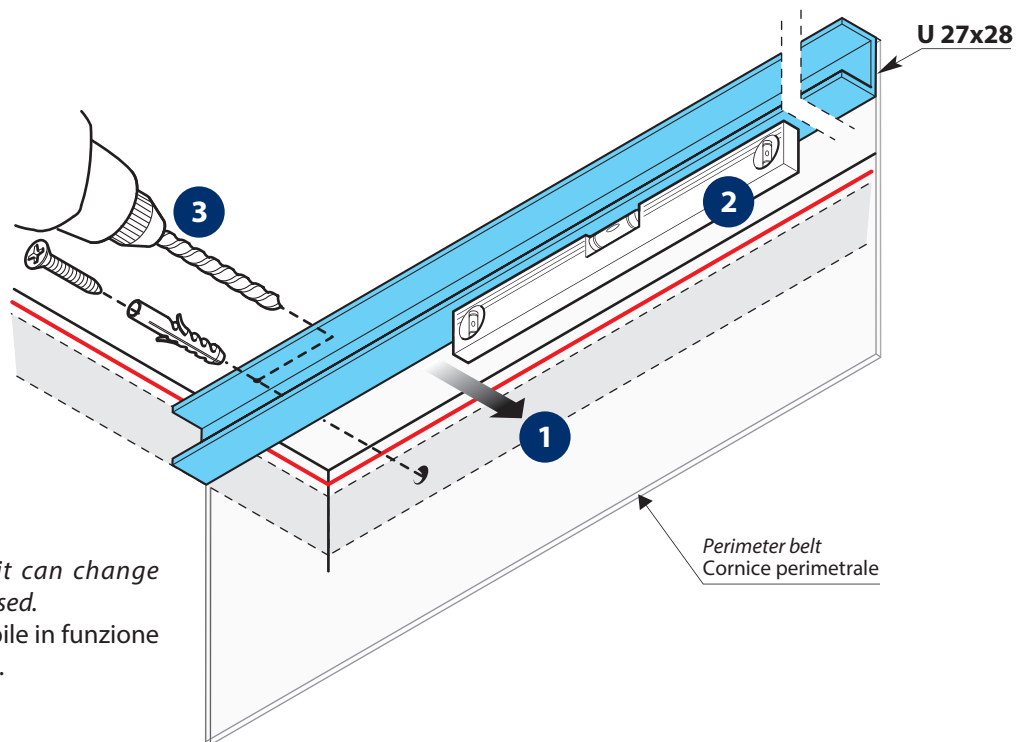


2

B!KLIMAX PERIMETER BELT INSTALLATION INSTALLAZIONE CORNICE PERIMETRALE B!KLIMAX

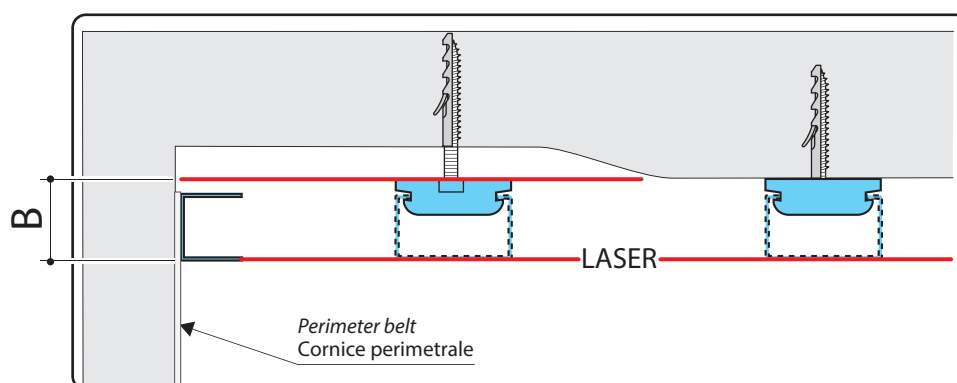


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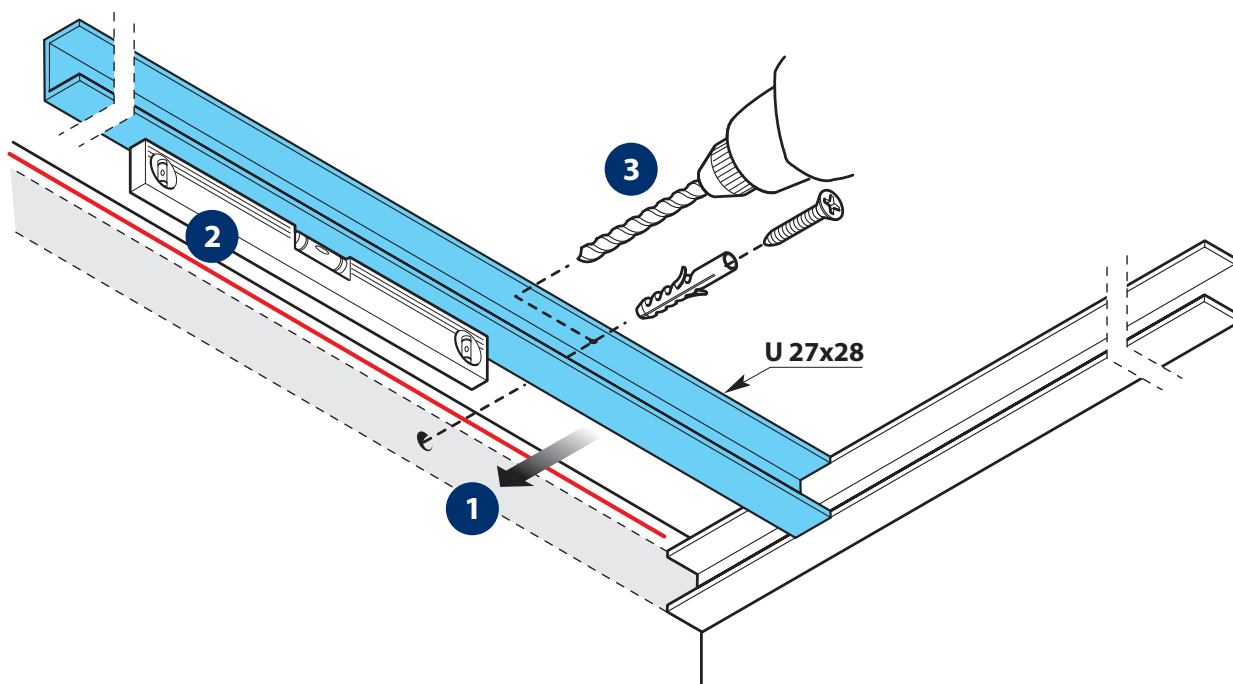


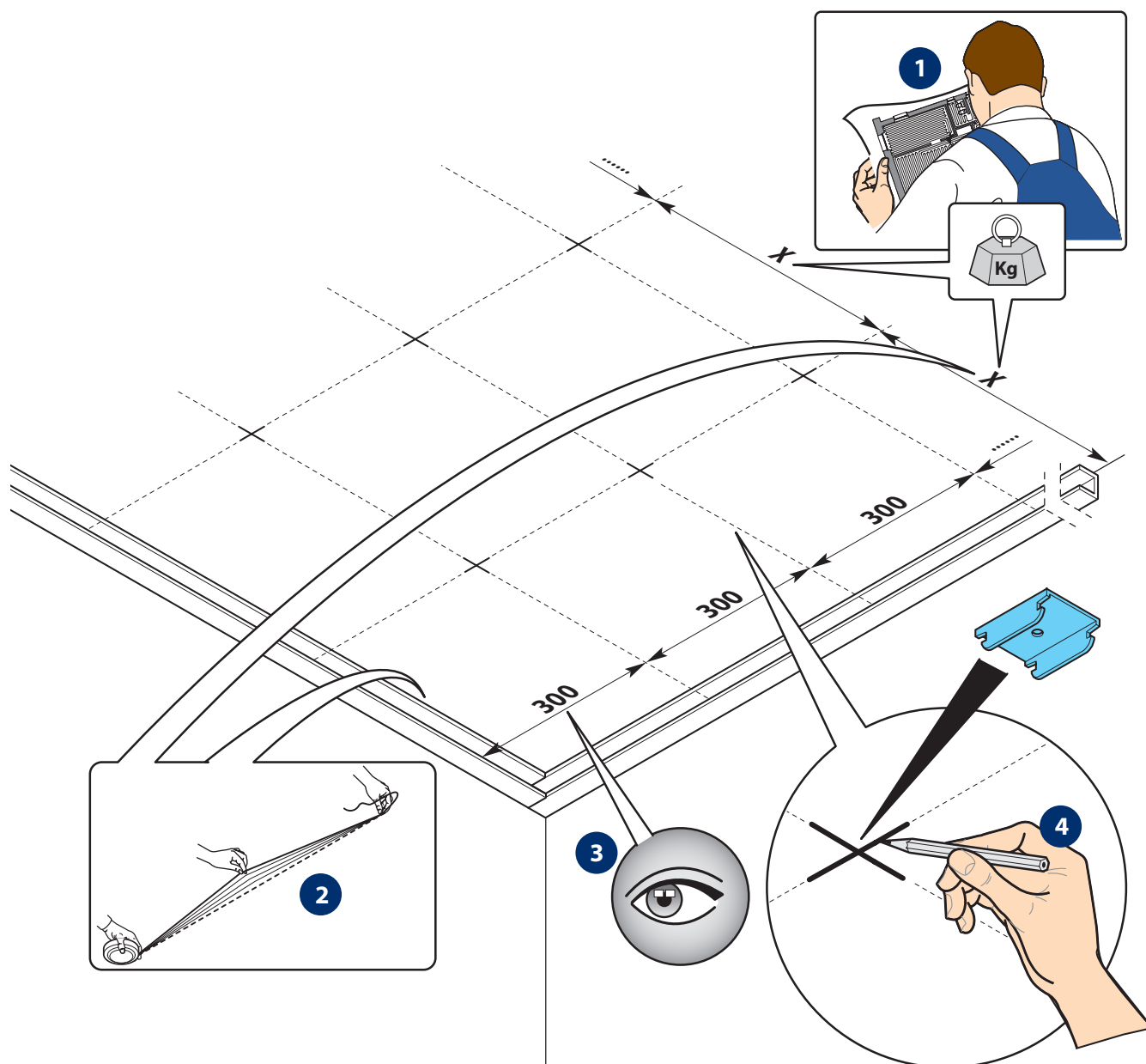
B= Approximate distance, it can change depending of the kind of clip used.

B= Distanza indicativa, variabile in funzione del tipo di cavaliere utilizzato.



4

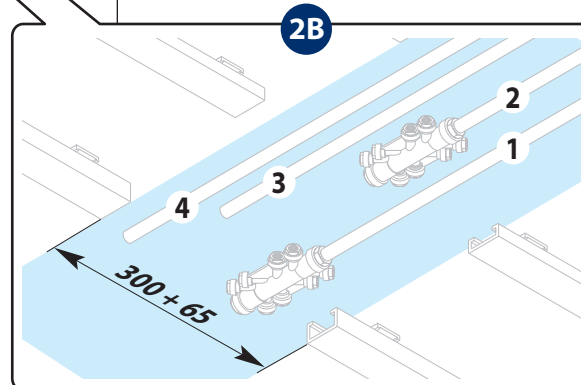
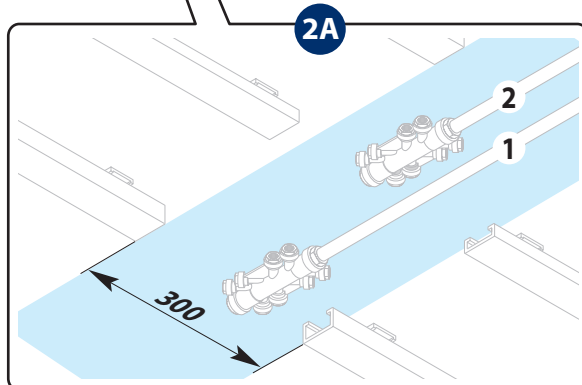
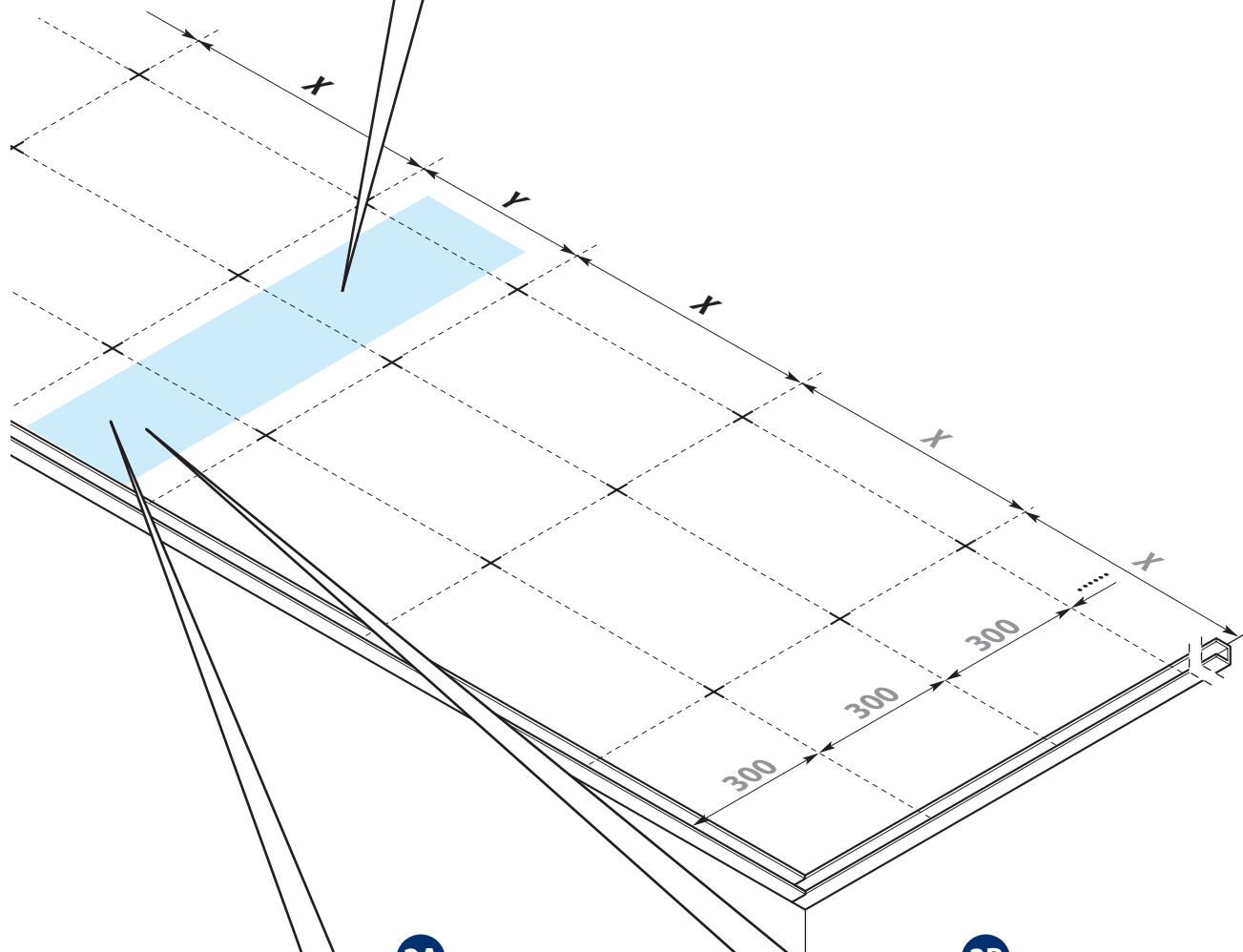
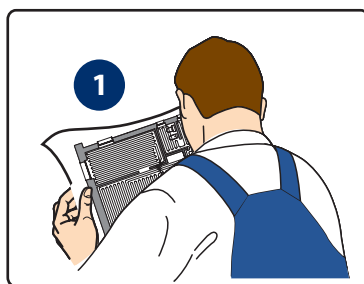


**5****INSTALLATION OF FIXING ELEMENTS
INSTALLAZIONE CAVALIERI DI FISSAGGIO**

X = distance indicated by the manufacturer of the profiles (plasterboard weight + b!klimax panels weight, they weigh about 9,5 kg/m²)

X = distanza indicata dal produttore dei profili (devono poter sostenere la lastra in cartongesso e il peso del pannello b!klimax - circa 9,5 kg/m²)

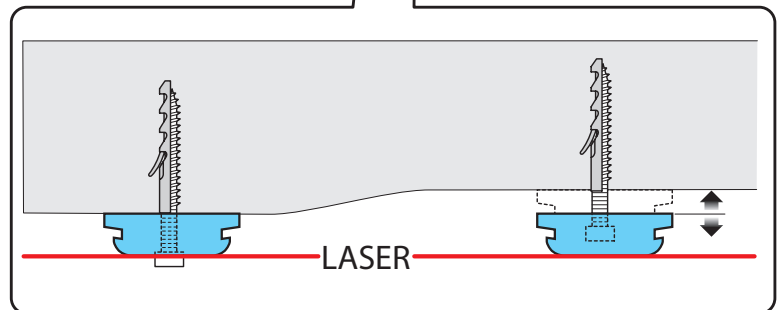
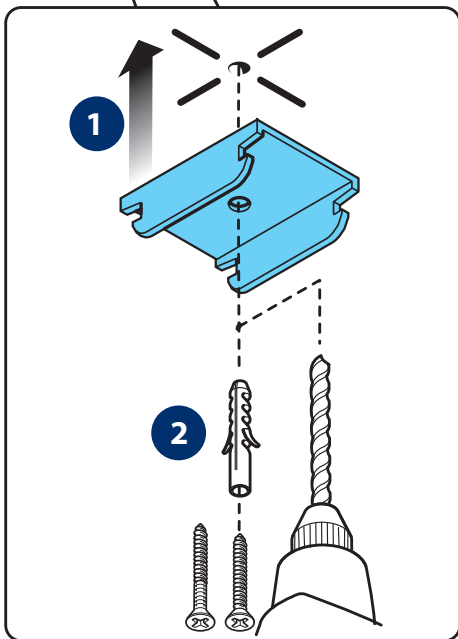
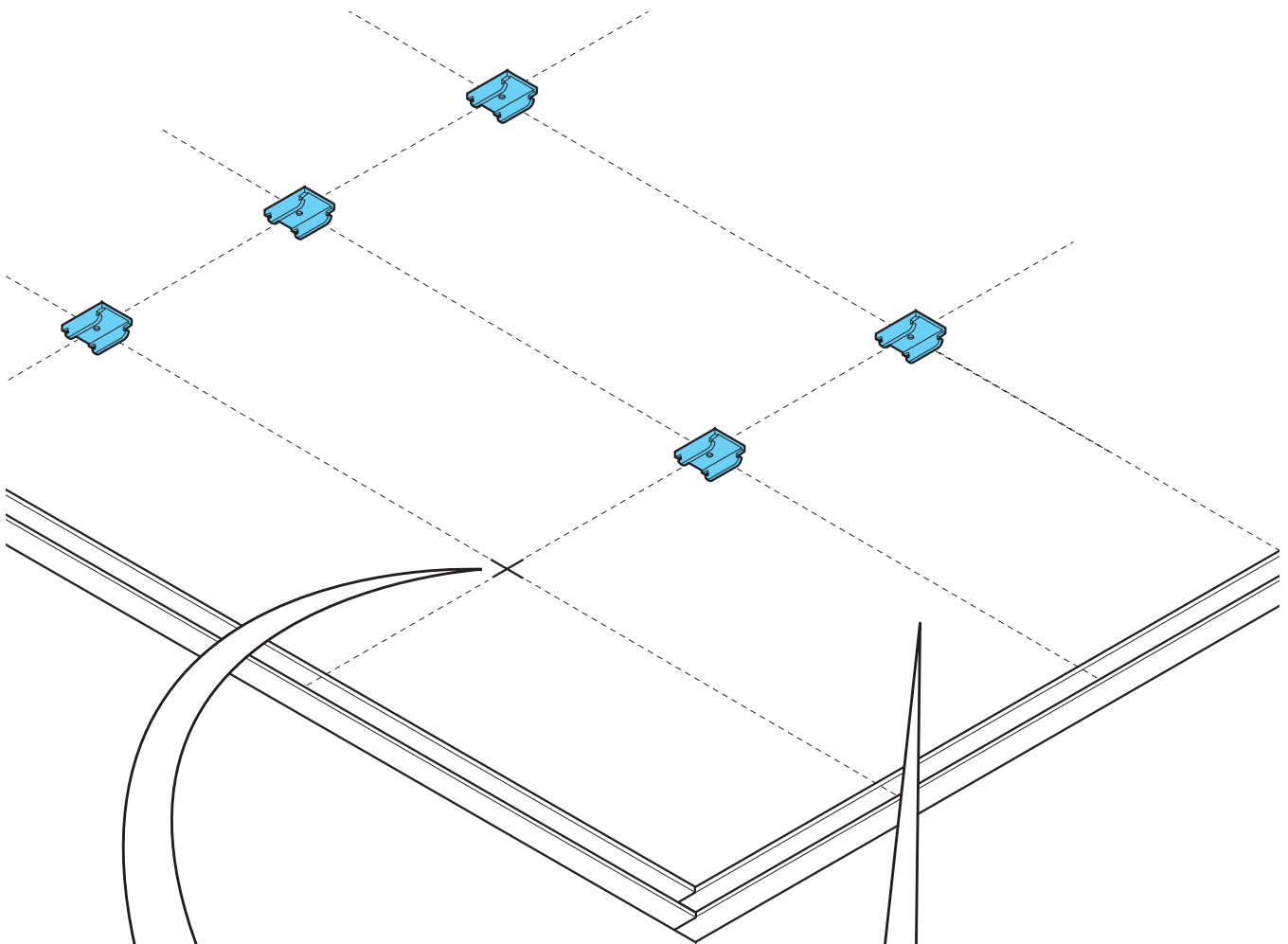
6



Consider additional 65 mm for each pair of distribution lines.
Prevedere 65 mm aggiuntivi per ogni coppia di linee di distribuzione.



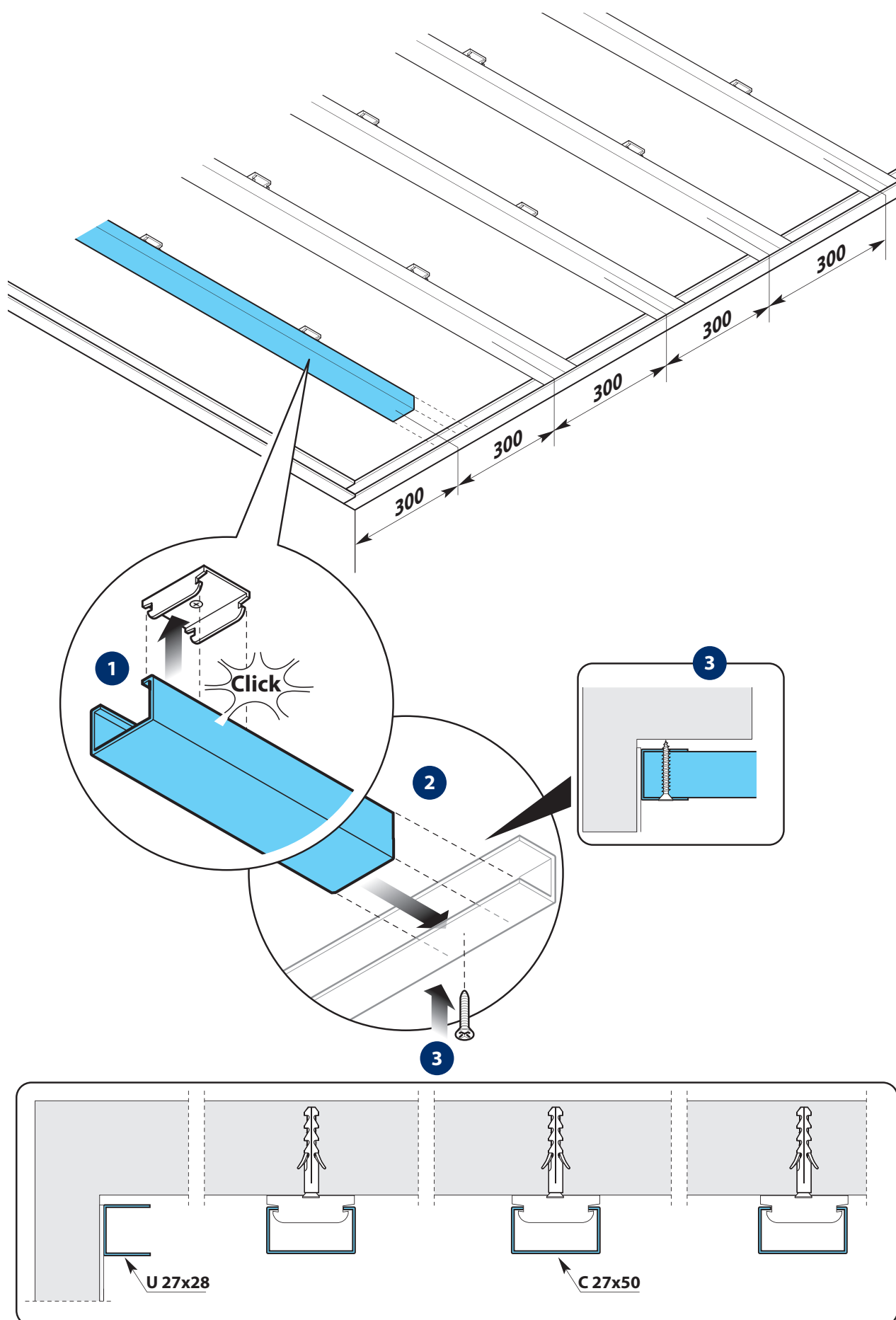
7





8

C-PROFILE INSTALLATION INSTALLAZIONE PROFILI A "C"

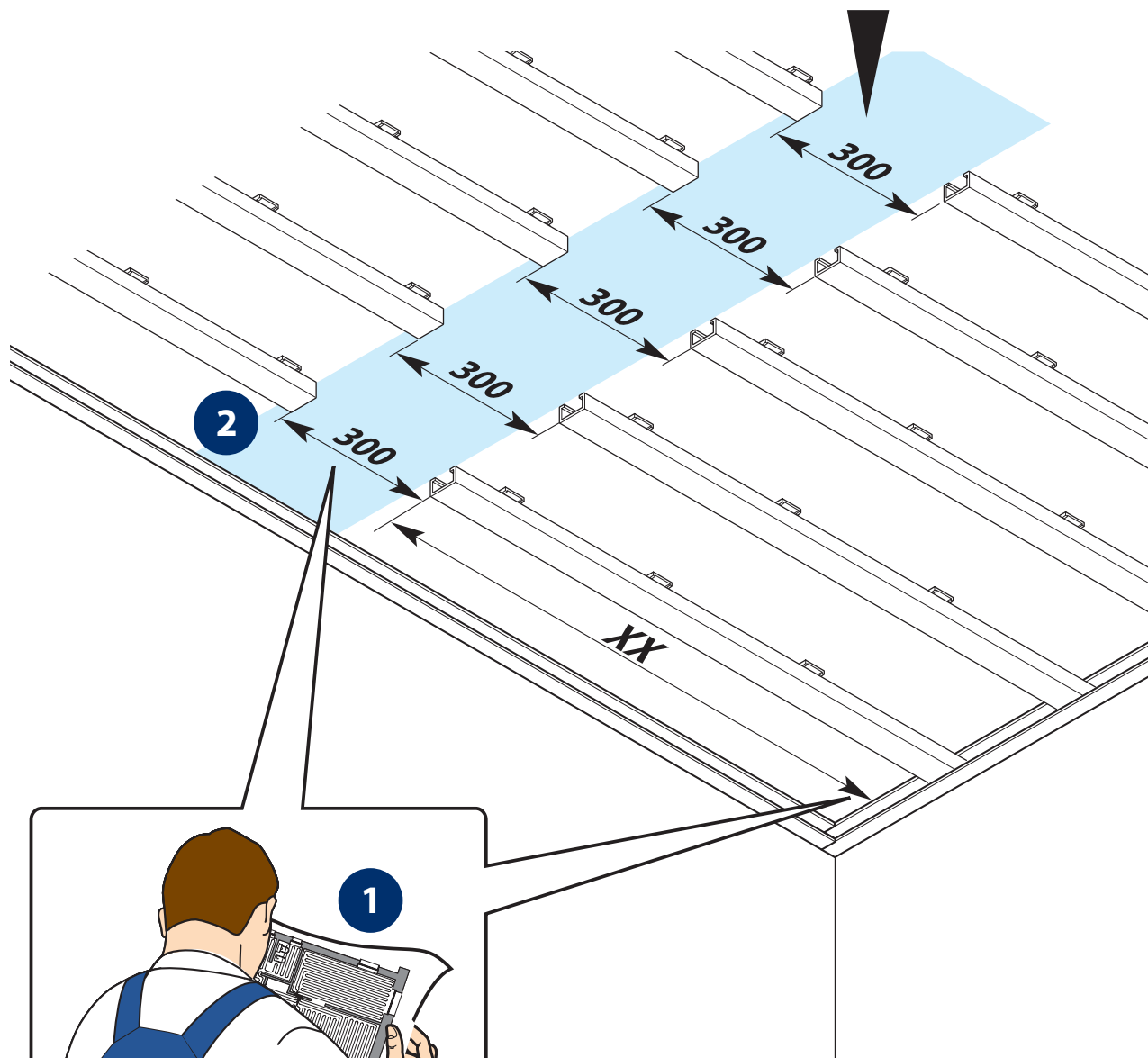


Approximate measurements for the passage of two of distribution lines.

Consider additional 65 mm for each pair of distribution lines.

Misure indicative per il passaggio di una coppia di linee di distribuzione.

Prevedere 65 mm aggiuntivi per ogni coppia di linee di distribuzione.



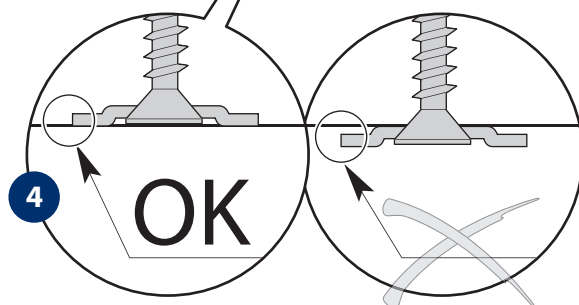
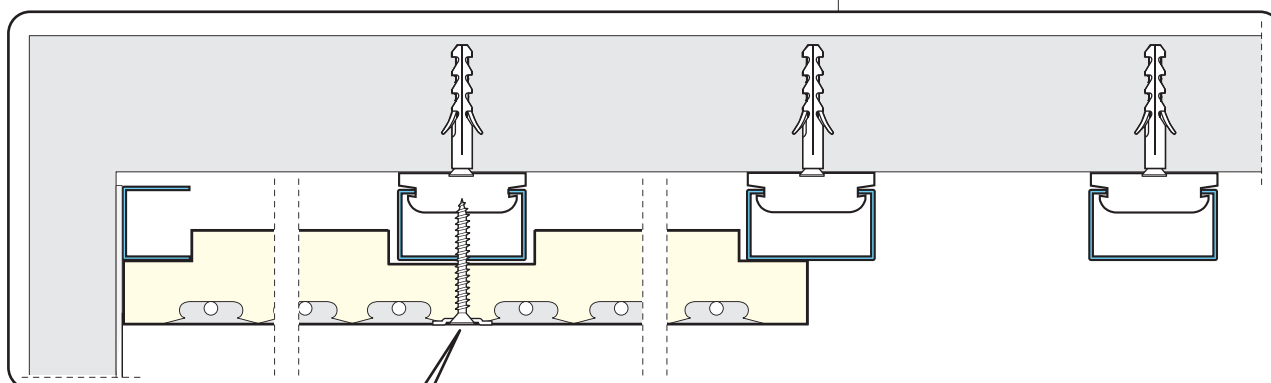
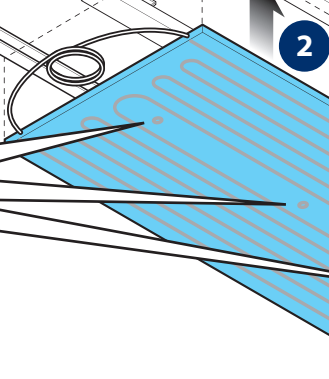
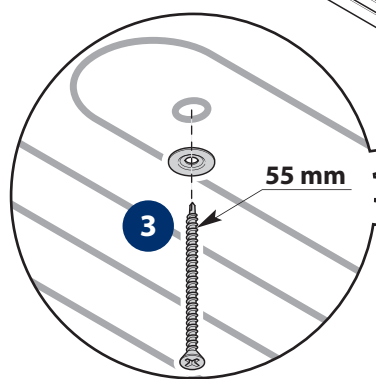
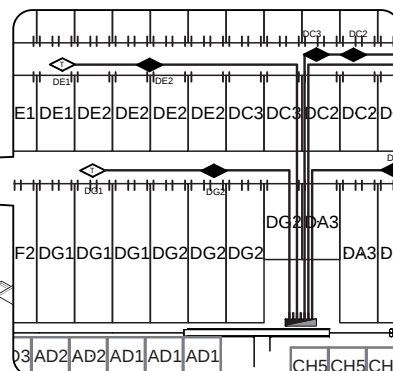
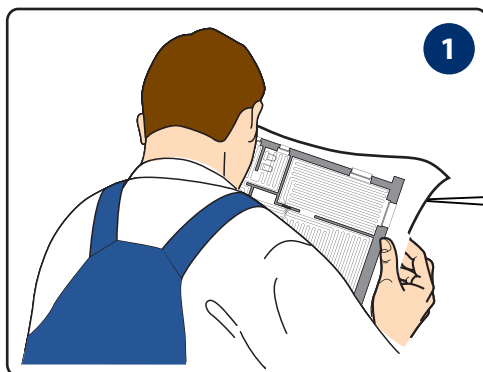
XX= Length of b!klimax panel from the project drawing

XX= Lunghezza pannello b!klimax rilevabile dal progetto



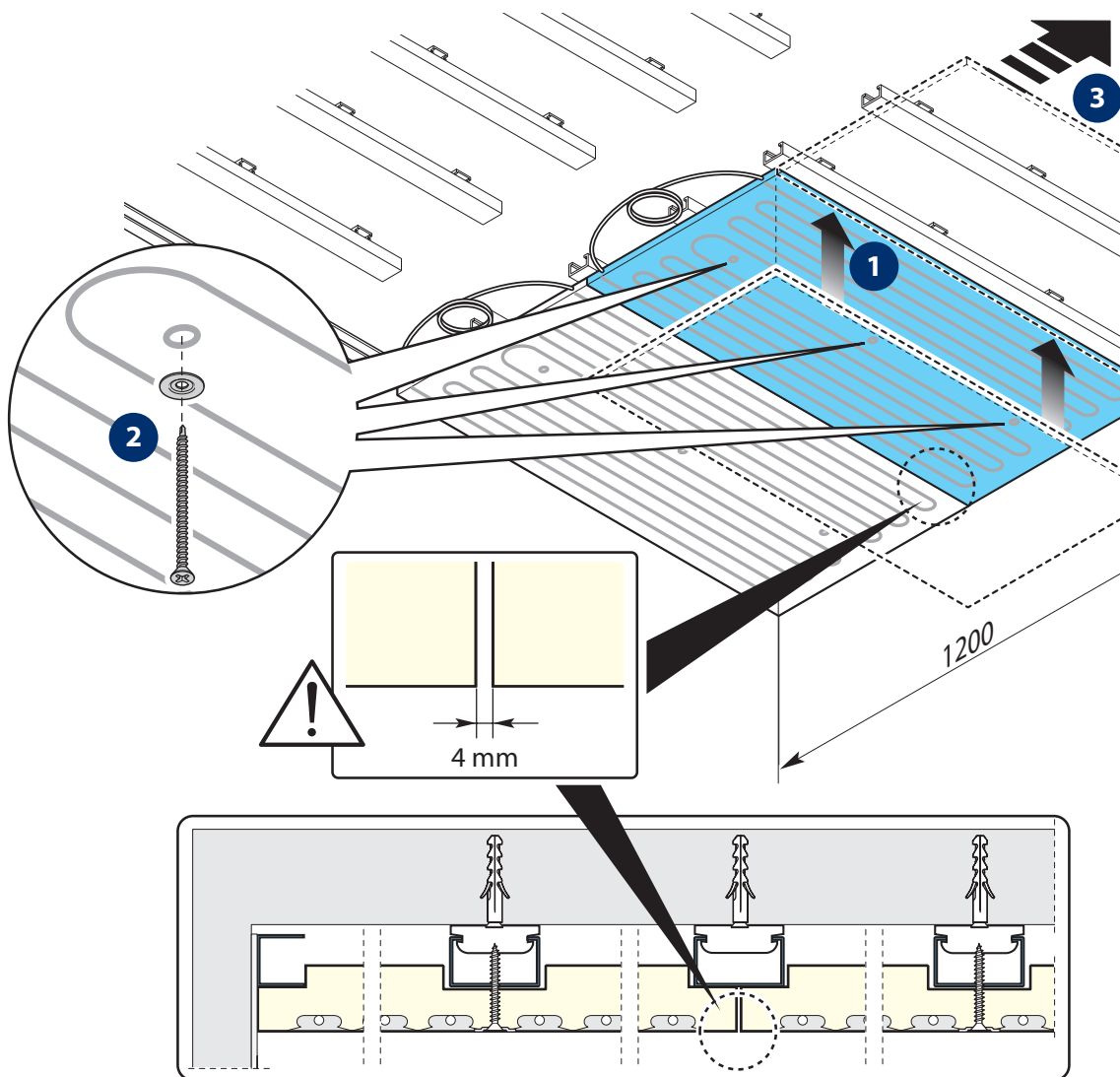
10

B!KLIMAX PANEL INSTALLATION INSTALLAZIONE PANNELLI B!KLIMAX



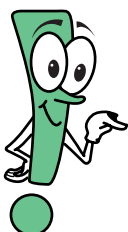
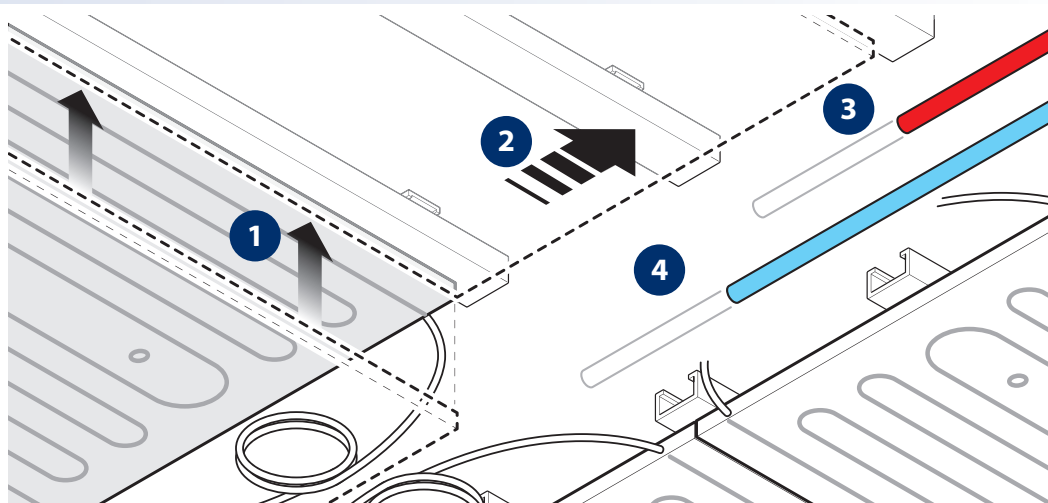


11



12

PIPE LINE INSTALLATION STESURA LINEE



Go on with the installation by consulting the chapter(s):
Continuare l'installazione consultando i capitoli:

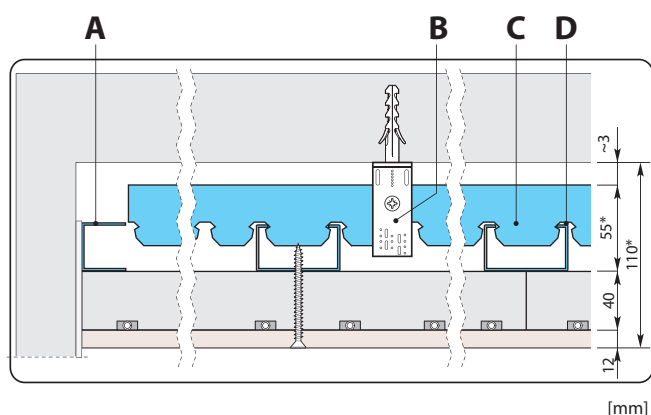
"Hydraulic connections"

"Collegamenti idraulici"

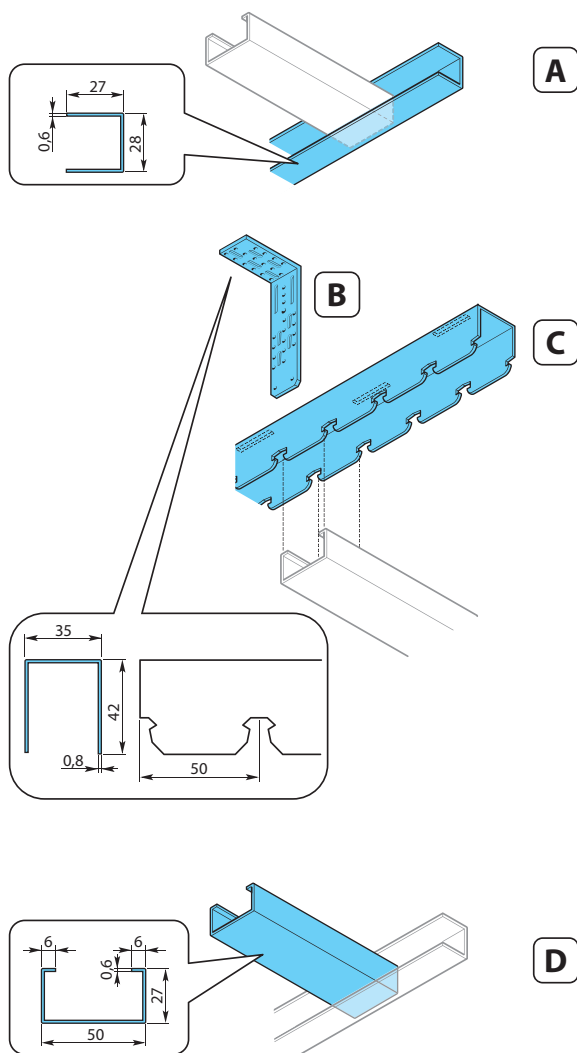
pag. 42

8.2 STRUCTURE WITH SNAP PROFILE - STRUTTURA CON PROFILO A SCATTO

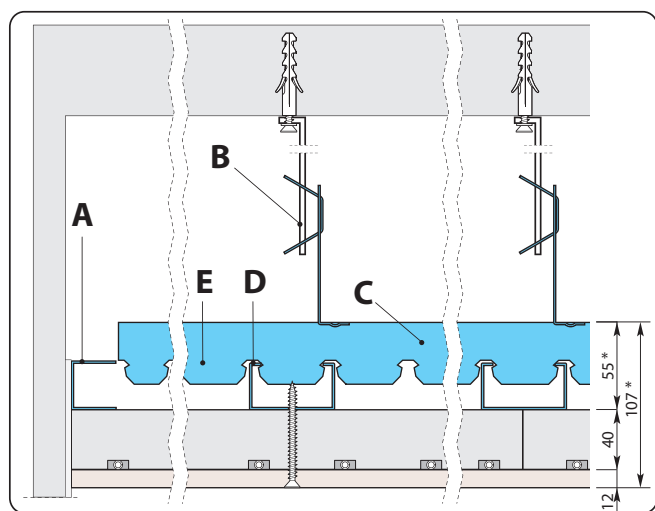
Adherent structure with snap profile
Struttura con profilo a scatto in aderenza



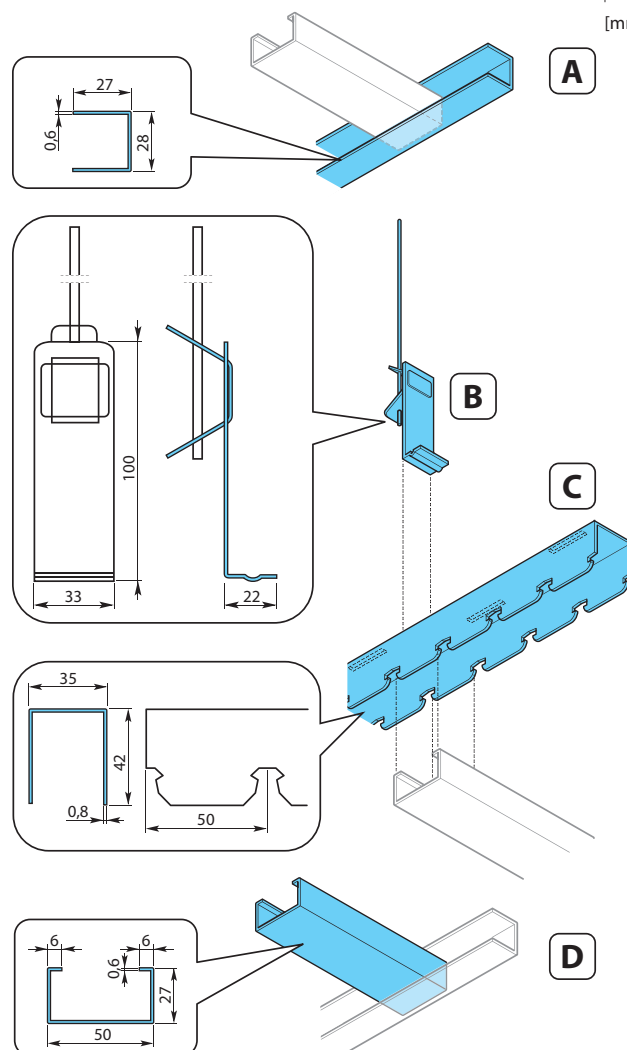
[mm]



Hanging structure with snap profile
Struttura con profilo a scatto pendinata



[mm]



All sizes for profiles shall be considered as indicative and they are suitable for a standard installation; in any case you can use profiles with sizes different from the ones mentioned in this manual.

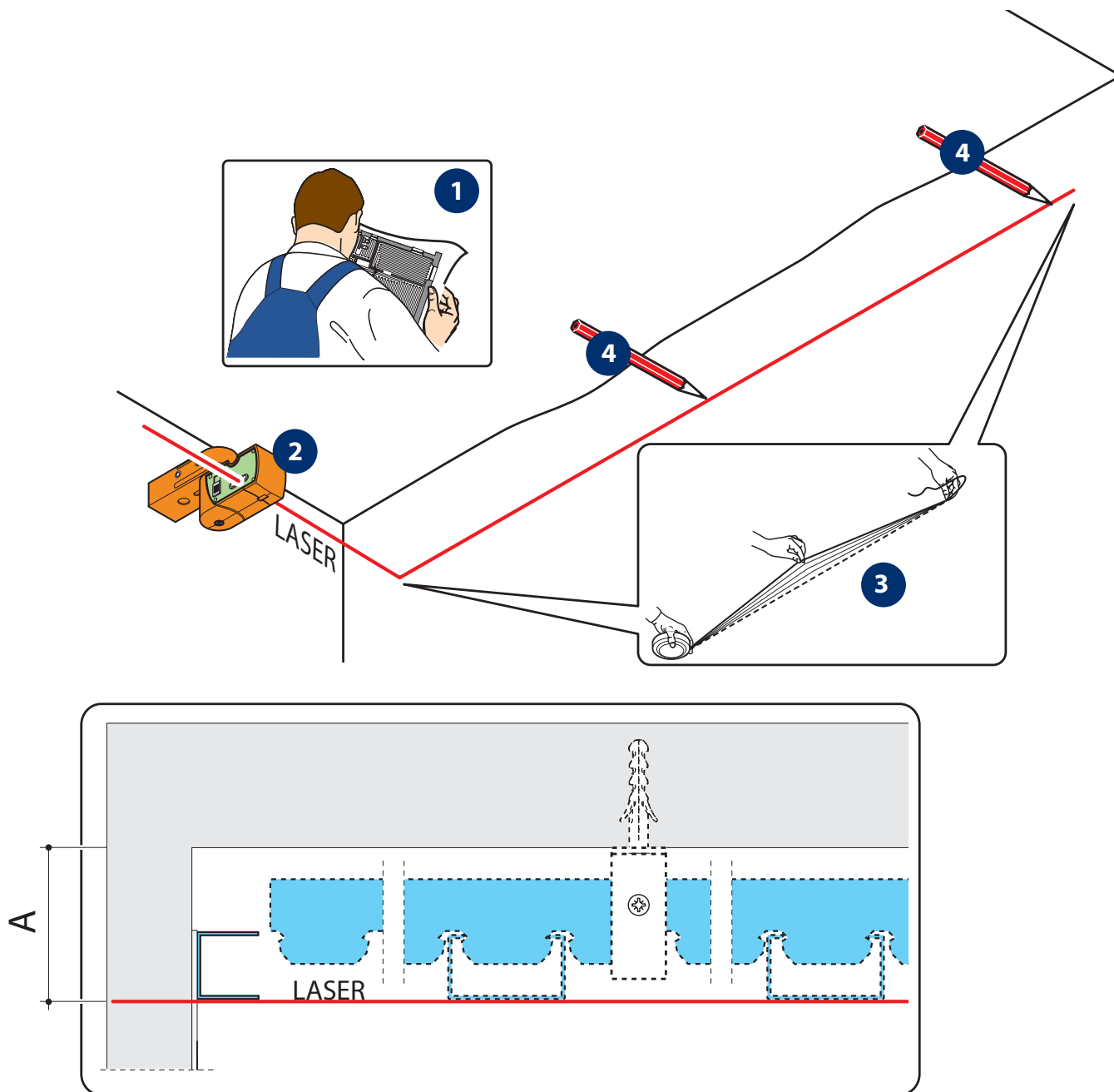
*** Variable dimension depending on the profile used.**

Tutte le quote dei profili sono da considerarsi puramente indicative e per un'installazione standard, è comunque possibile l'utilizzo di profili con misure diverse da quelle descritte

*** Quota variabile in base al profilo utilizzato.**

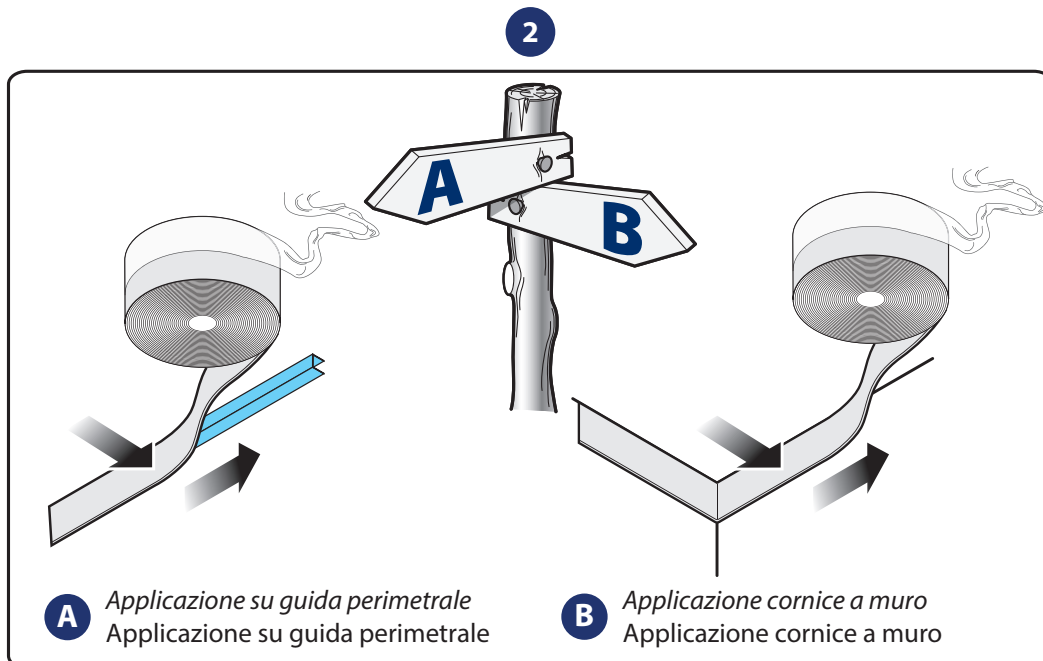
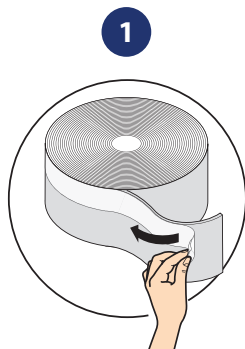
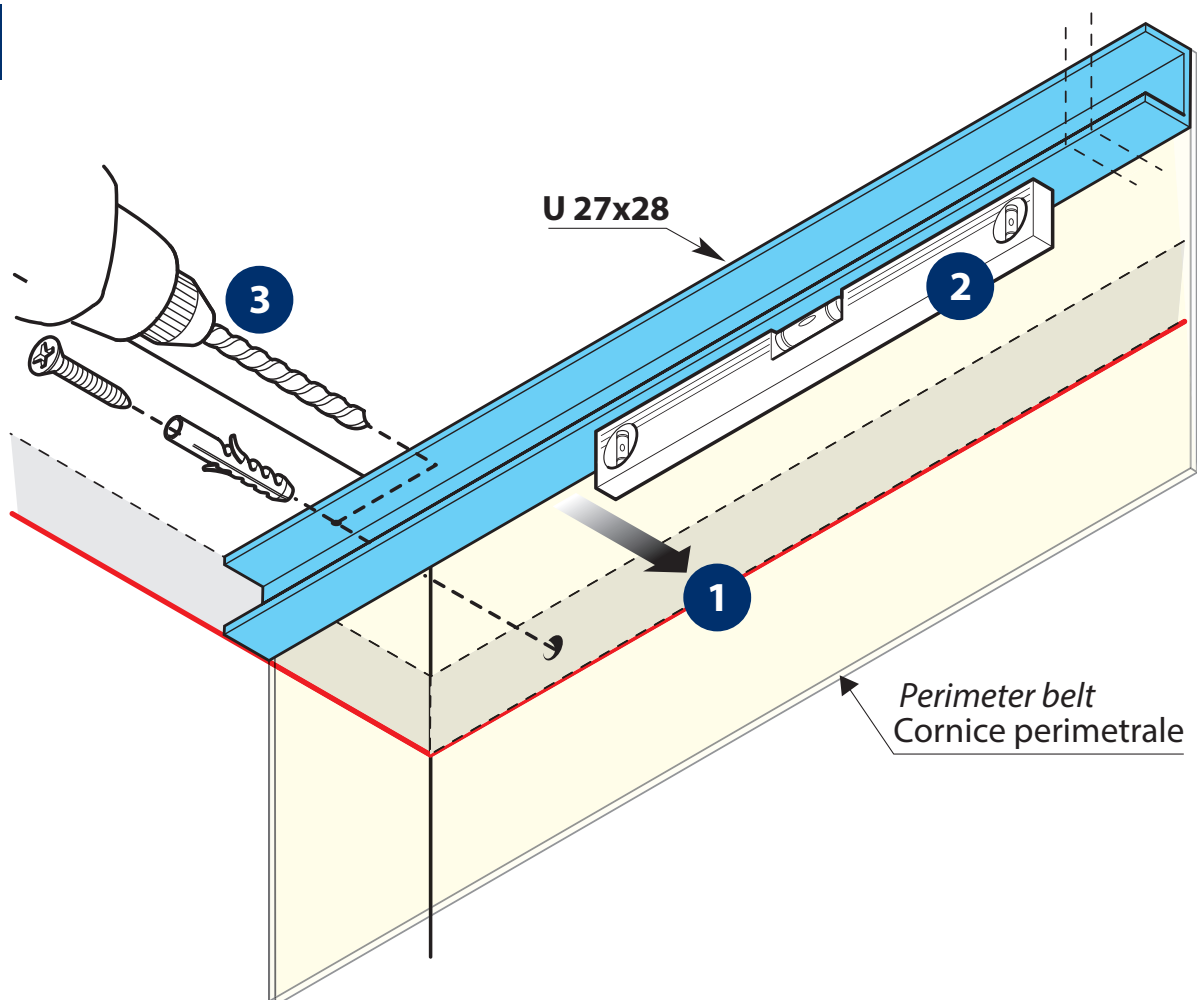
**1****2**

.....

9**Progressive sequence of installation steps****Sequenza progressiva delle fasi di installazione***The measurements indicated in all stages are given in mm**Le misure indicate in tutte le fasi sono in mm***1****PERIMETER GUIDE INSTALLATION****INSTALLAZIONE GUIDE PERIMETRALI****Adherent structure with snap profile:****Struttura con profili a scatto in aderenza:***A= Approximate distance depending on how smooth the ceiling is.**A= Distanza indicativa, variabile in funzione della planarità del soffitto.***Hanging structure:****Strutture pendinate:***A= Distance can be set as you wish**A= Distanza impostabile a piacere*

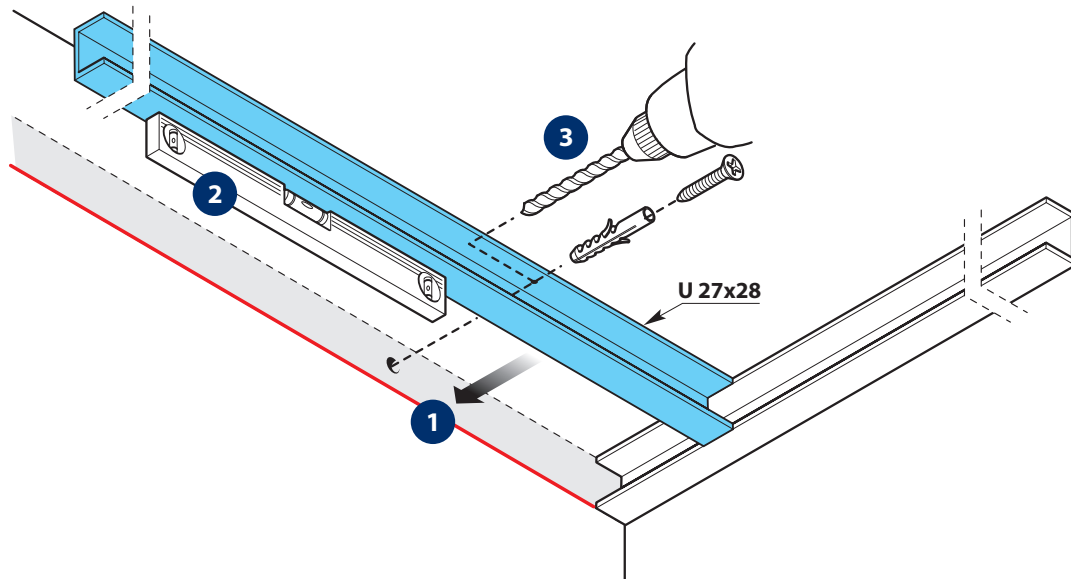
**2**

B!KLIMAX PERIMETER BELT INSTALLATION **INSTALLAZIONE CORNICE PERIMETRALE B!KLIMAX**

**3**

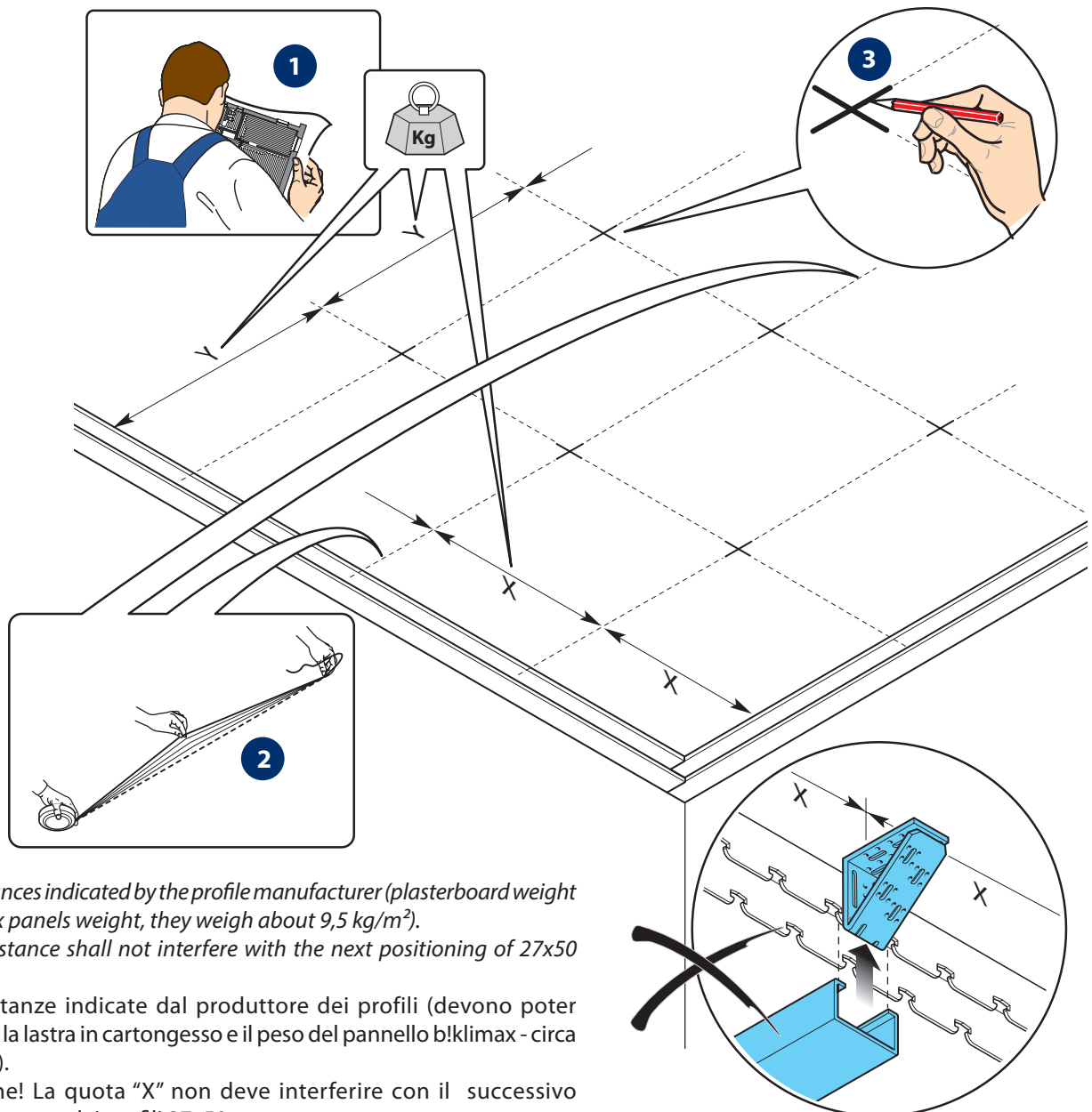


4



5

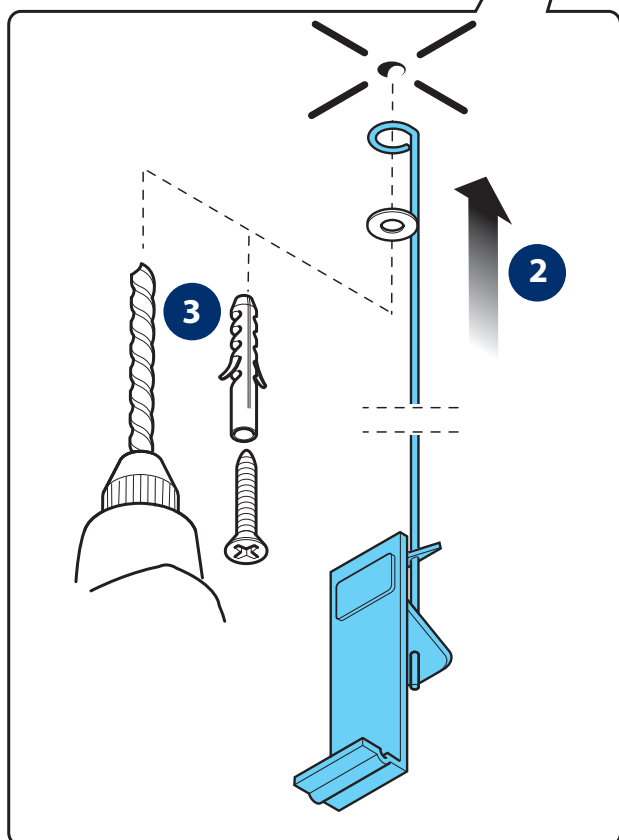
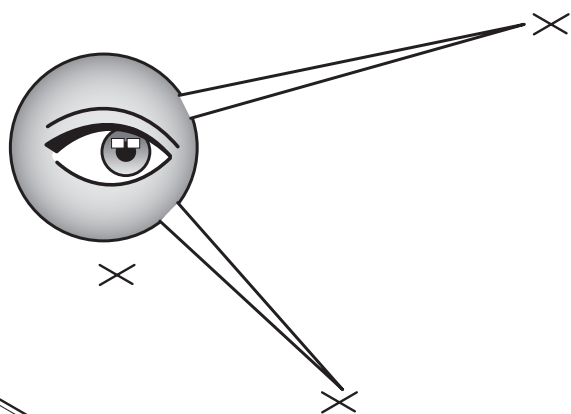
INSTALLATION OF SUPPORT ELEMENTS FOR SNAP PROFILES INSTALLAZIONE SUPPORTI PER PROFILO A SCATTO



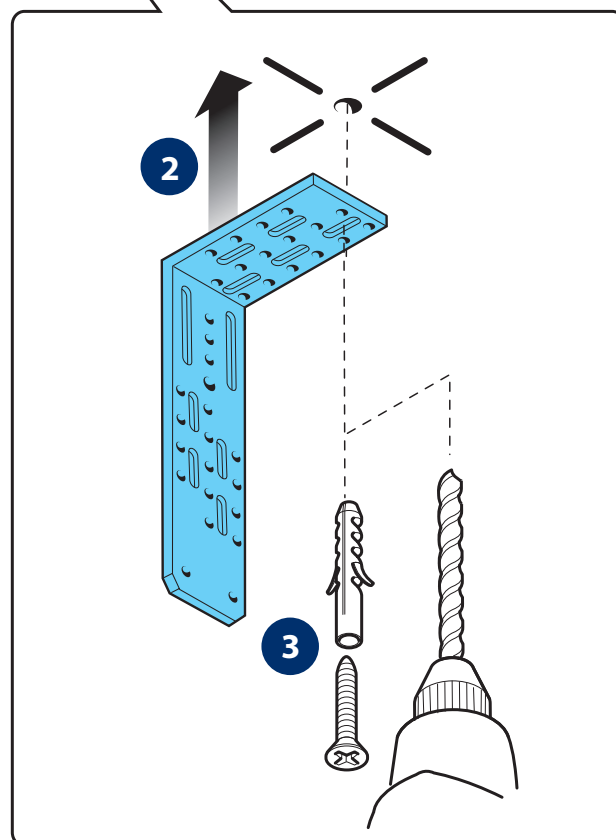


6

1



HANGING SNAP PROFILE
PROFILO SCATTO PENDINATA



SNAP PROFILE
PROFILO SCATTO



Do not use braided or steel wire suspension bars, only ever use components that meet regulatory requirements in the country of use.

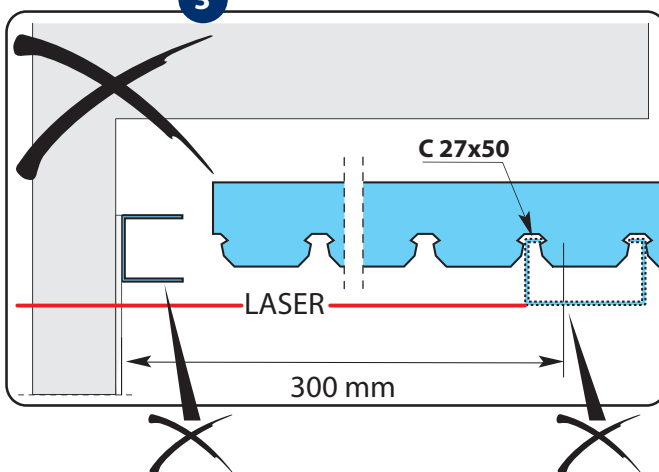
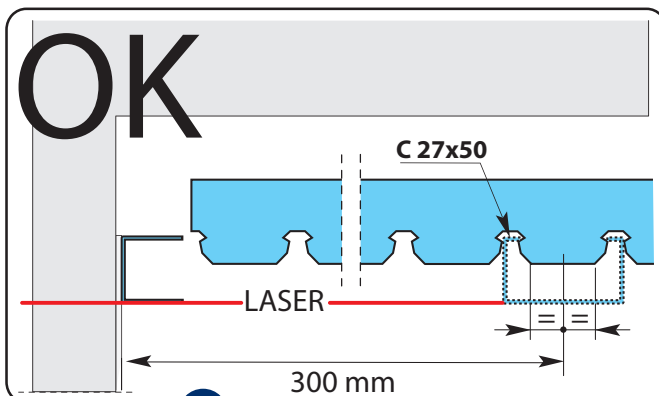
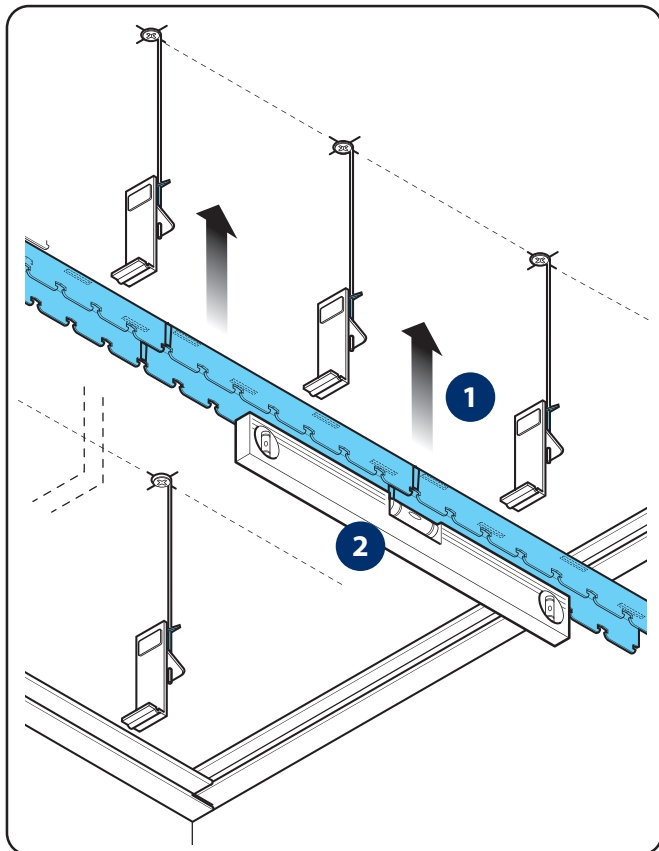
Non usare pendini a treccia o filo di acciaio singolo ma esclusivamente componenti che rispondano alle normative vigenti nel Paese di utilizzo.



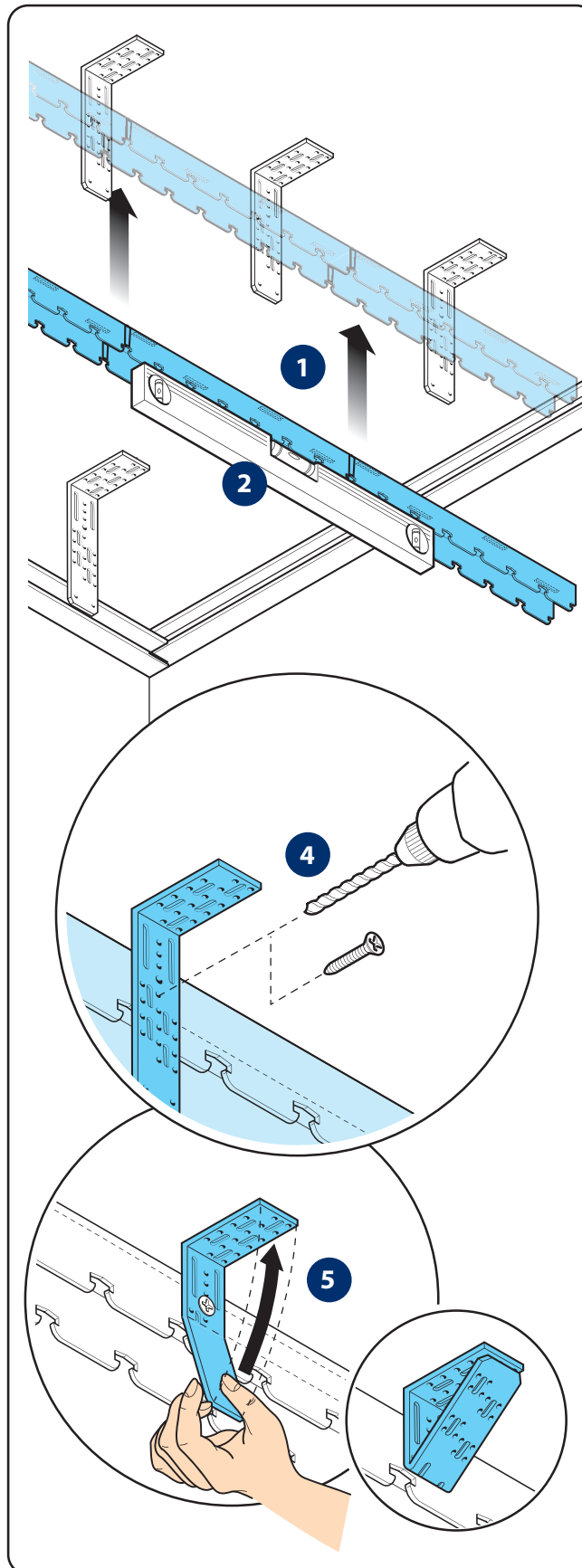
7

INSTALLATION OF SNAP PROFILES INSTALLAZIONE DEI PROFILI A SCATTO

HANGING SNAP PROFILE PROFILO SCATTO PENDINATA



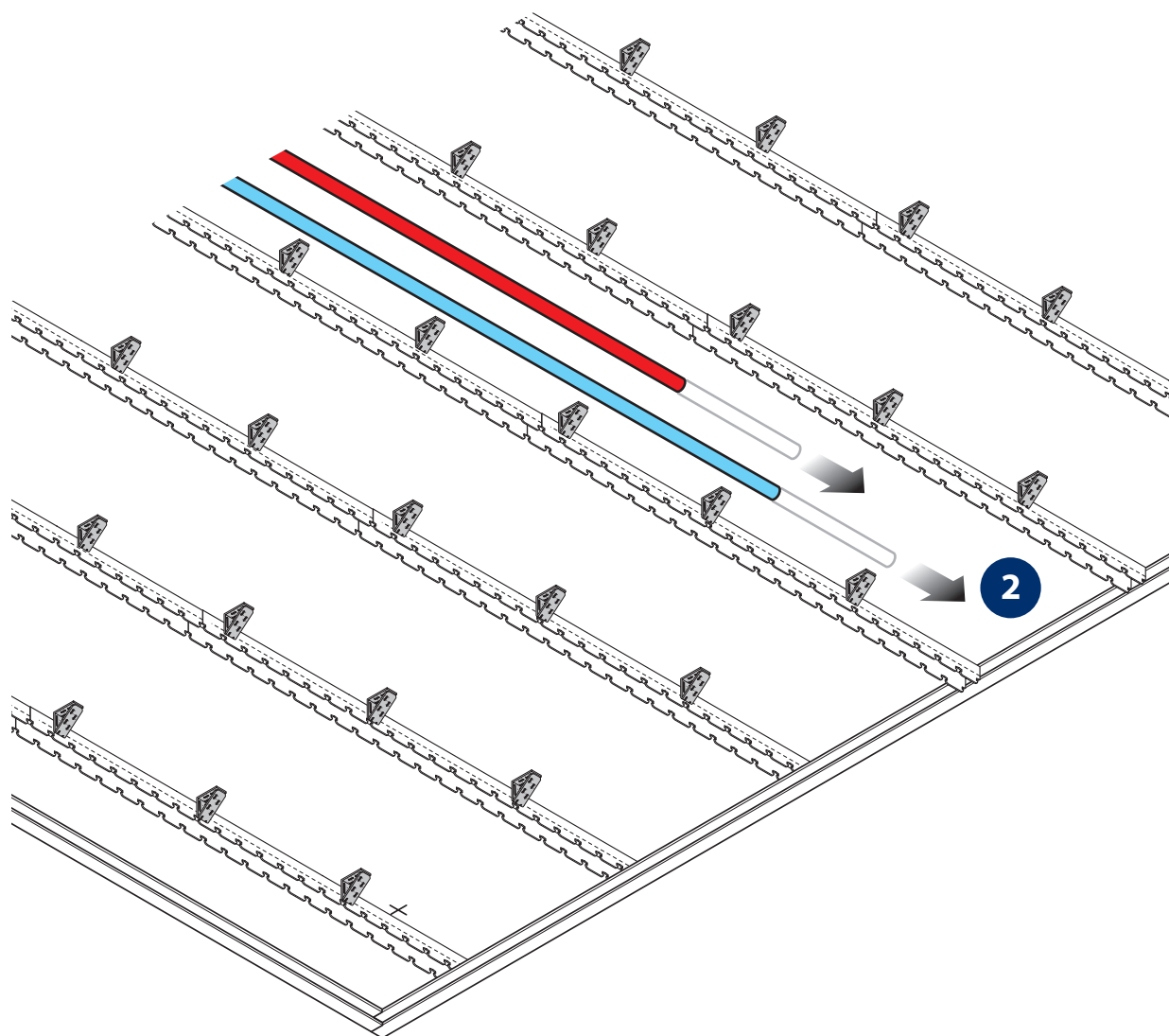
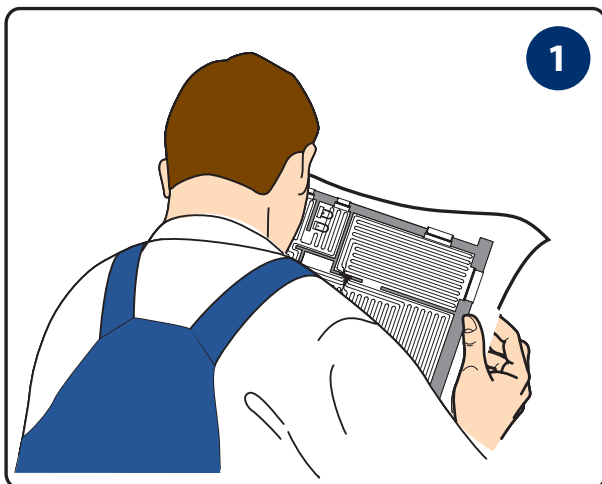
SNAP PROFILE PROFILO SCATTO





8

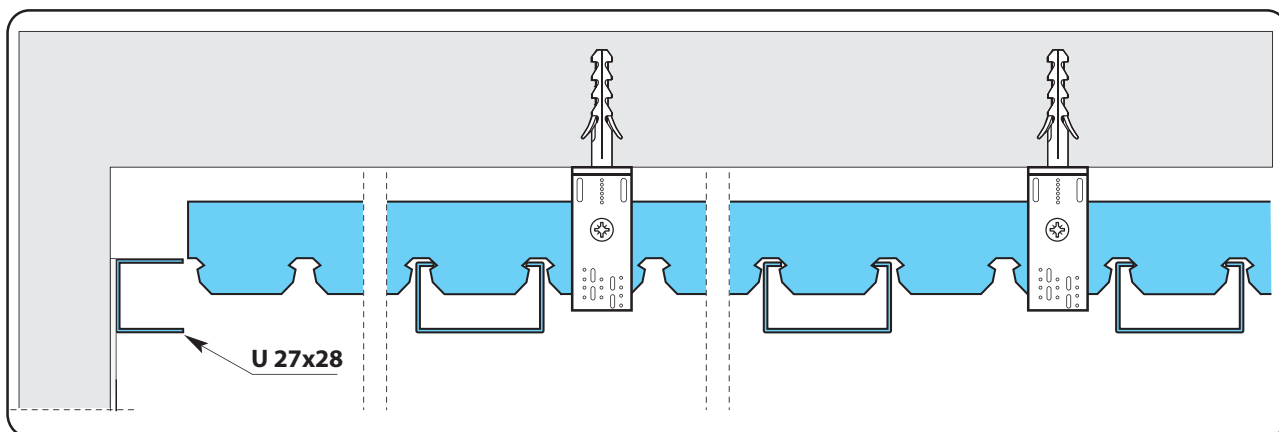
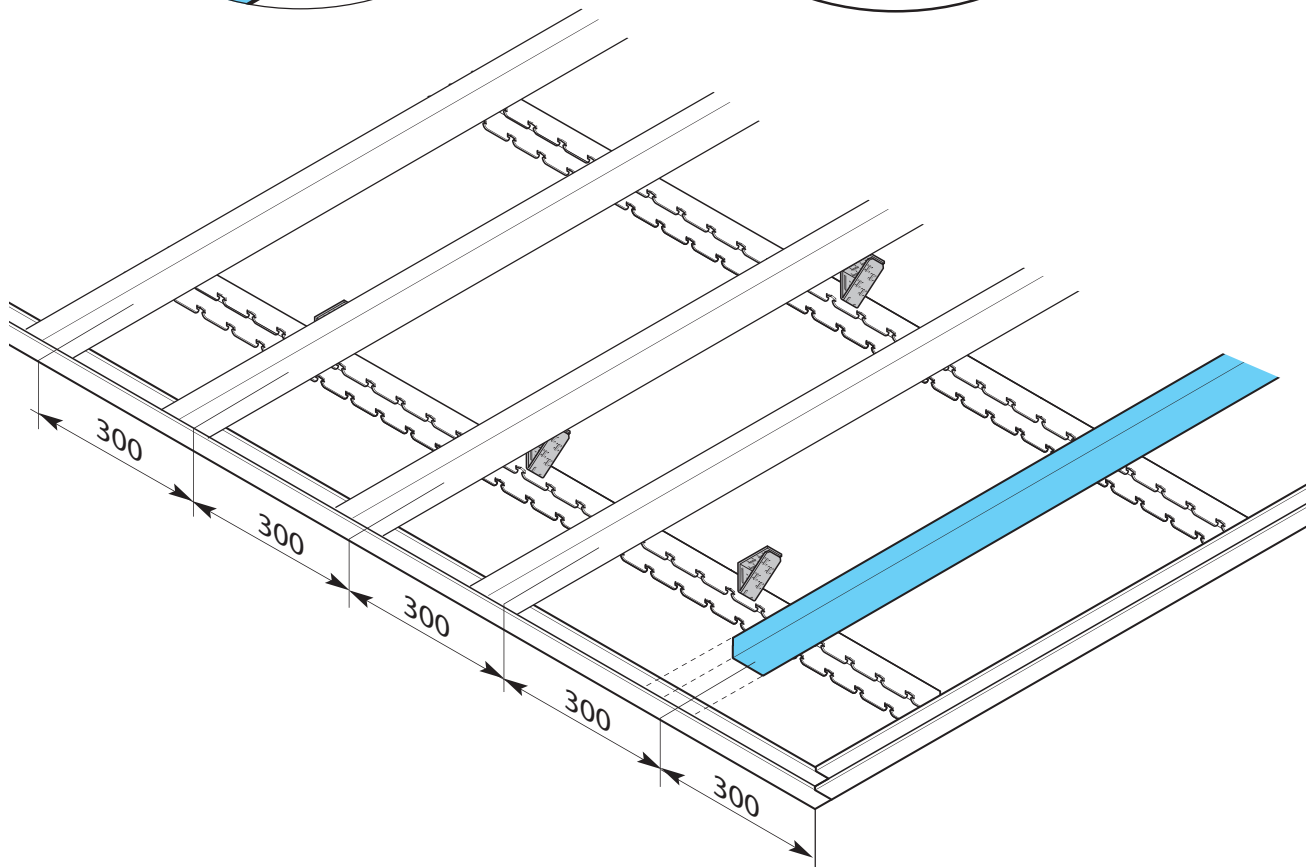
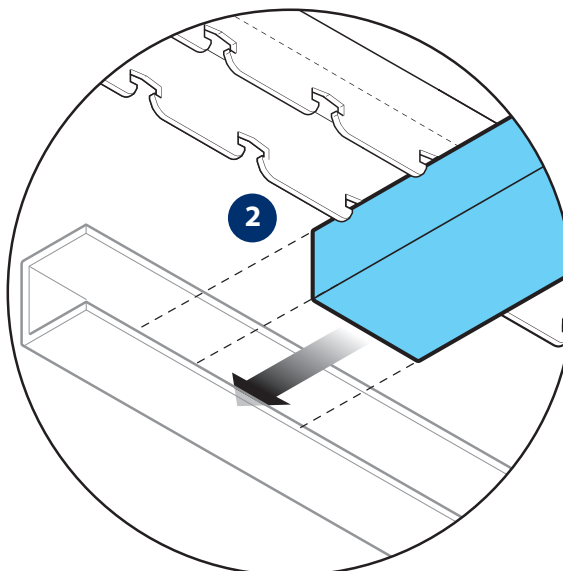
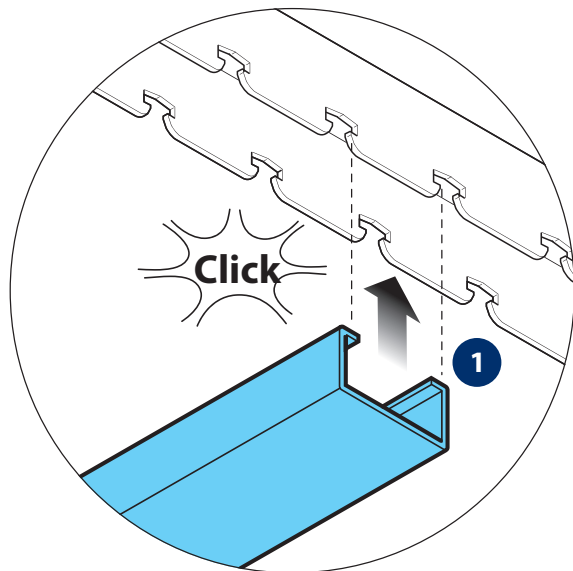
MAIN PIPE LINE INSTALLATION STESURA DELLE LINEE PRINCIPALI





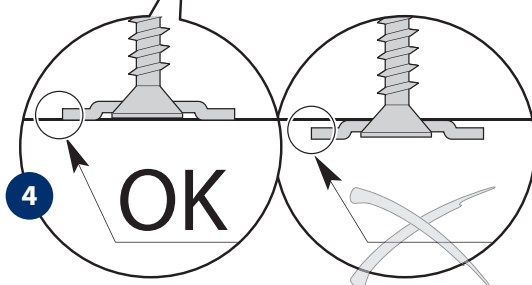
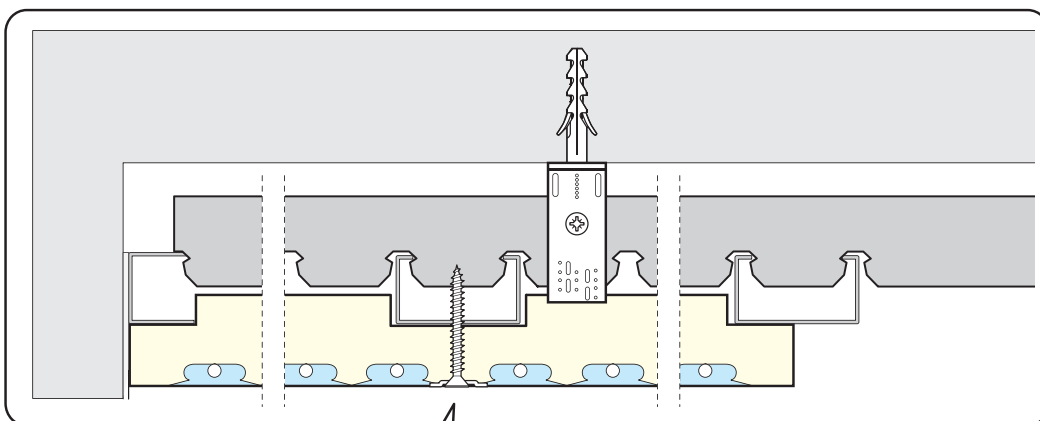
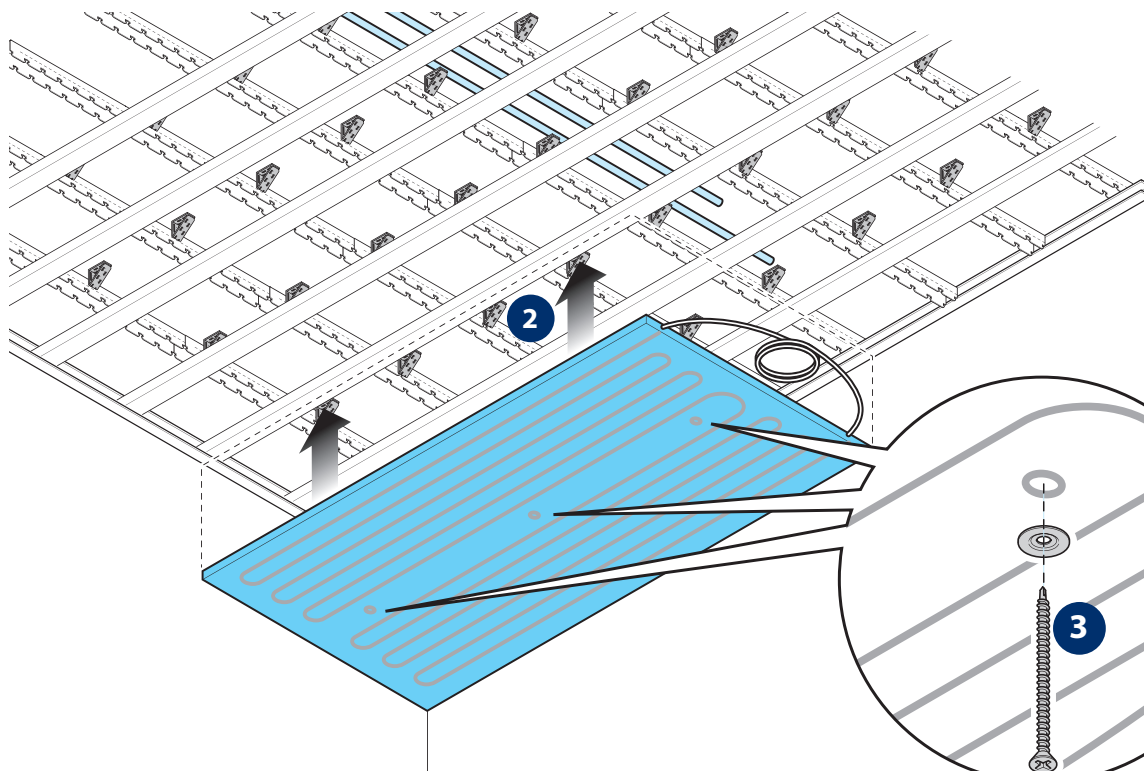
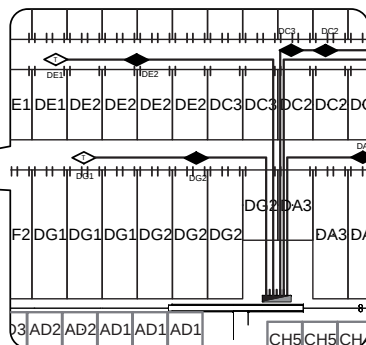
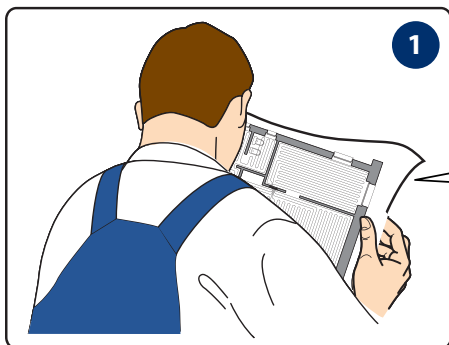
9

C-PROFILE INSTALLATION INSTALLAZIONE DEI PROFILI A "C"



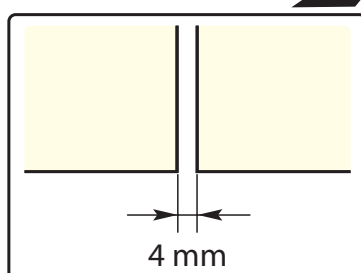
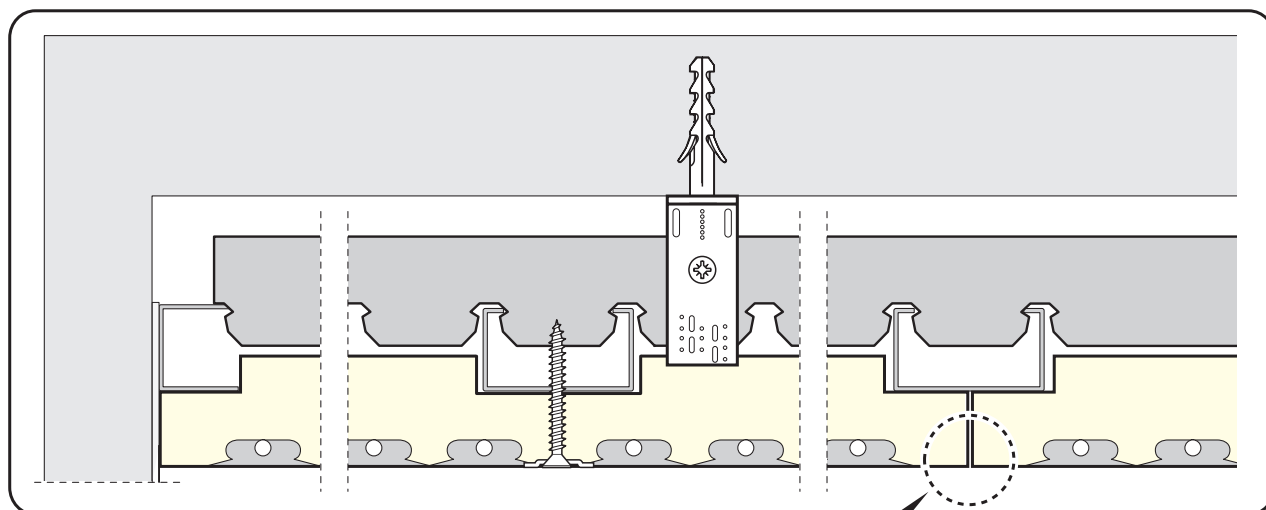
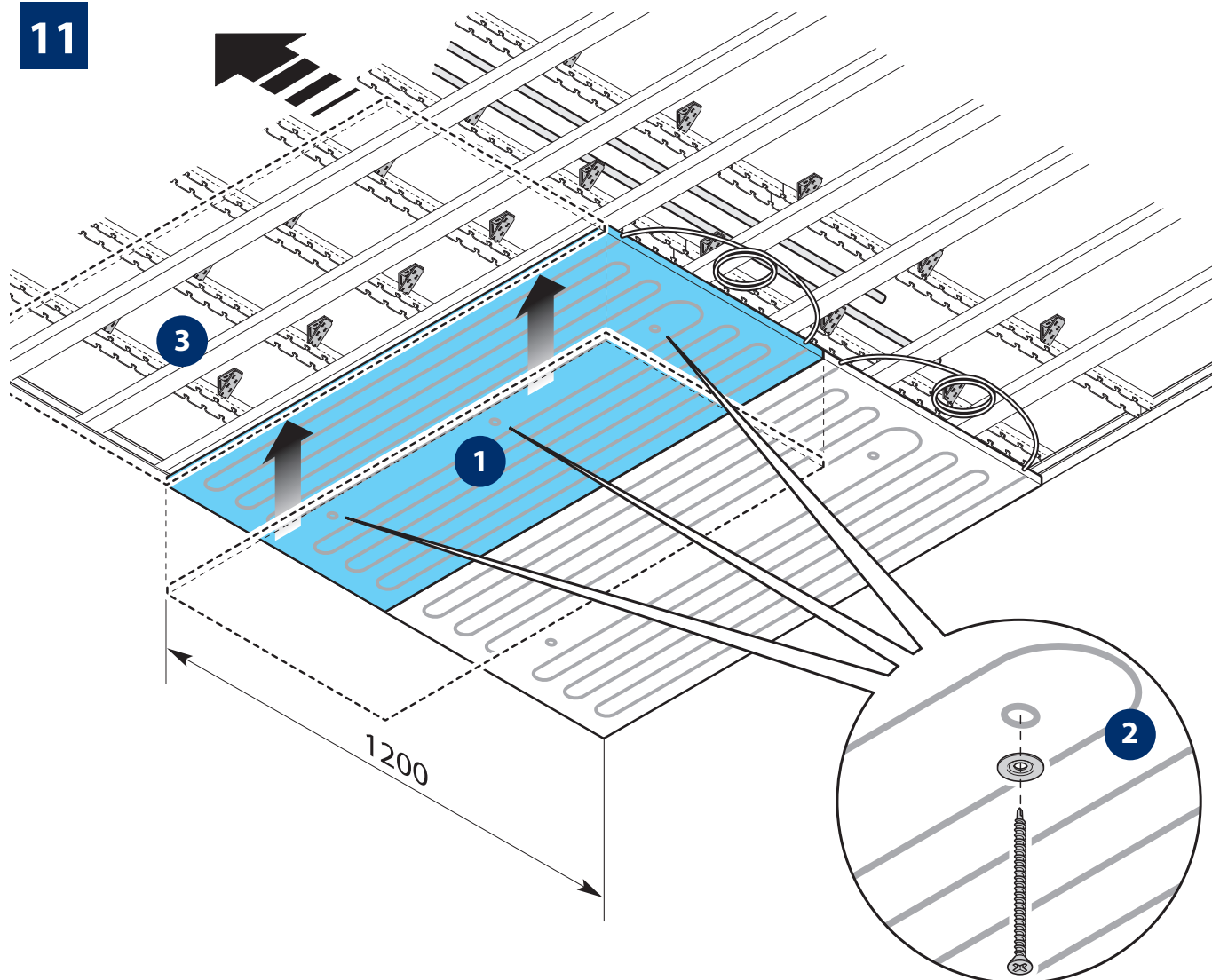
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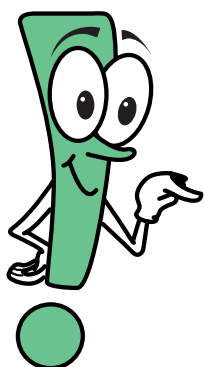
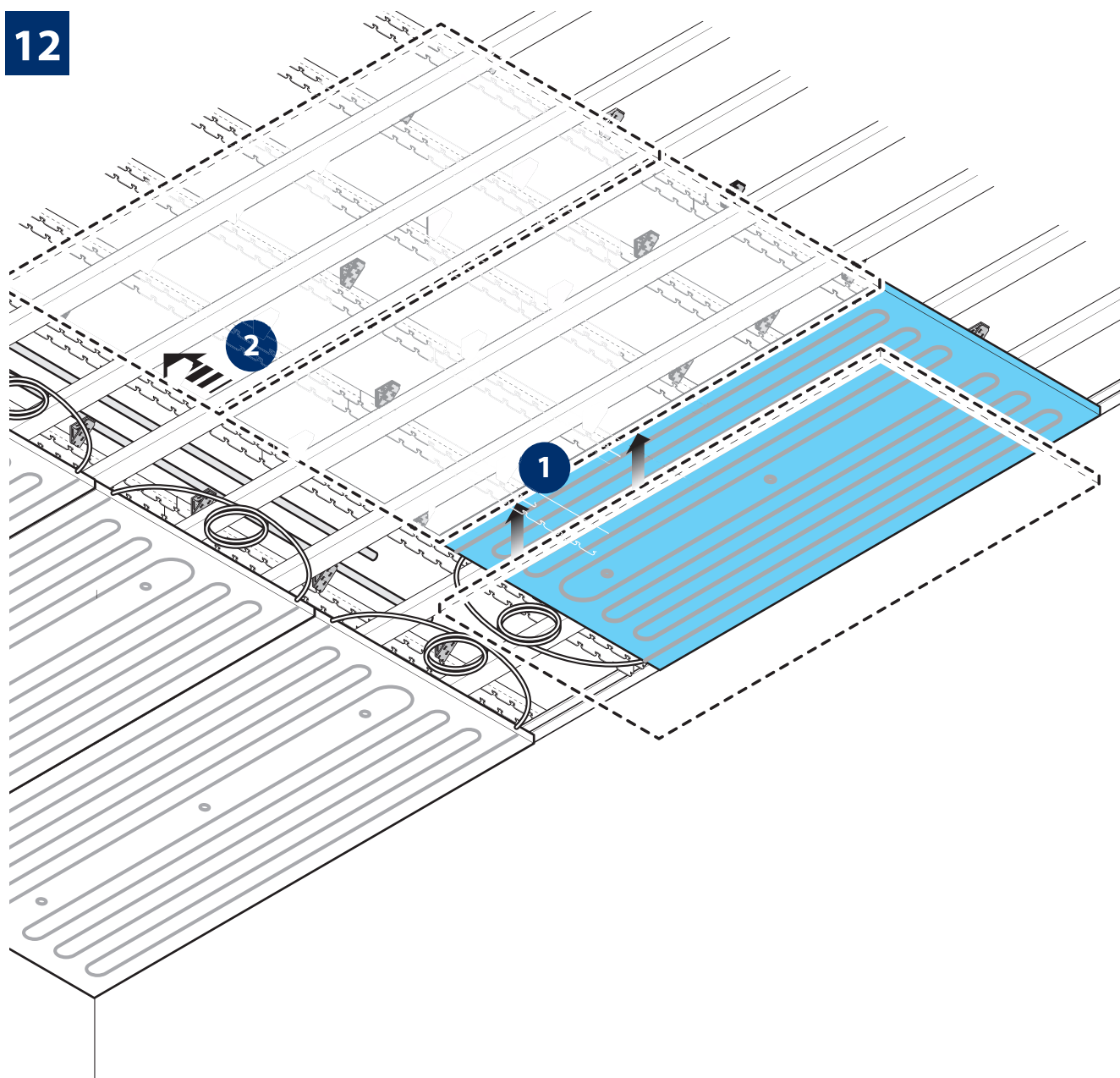
B!KLIMAX PANEL INSTALLATION **INSTALLAZIONE PANNELLI B!KLIMAX**





11





Go on with the installation by consulting the following chapter(s):

Continuare l'installazione consultando i capitoli:

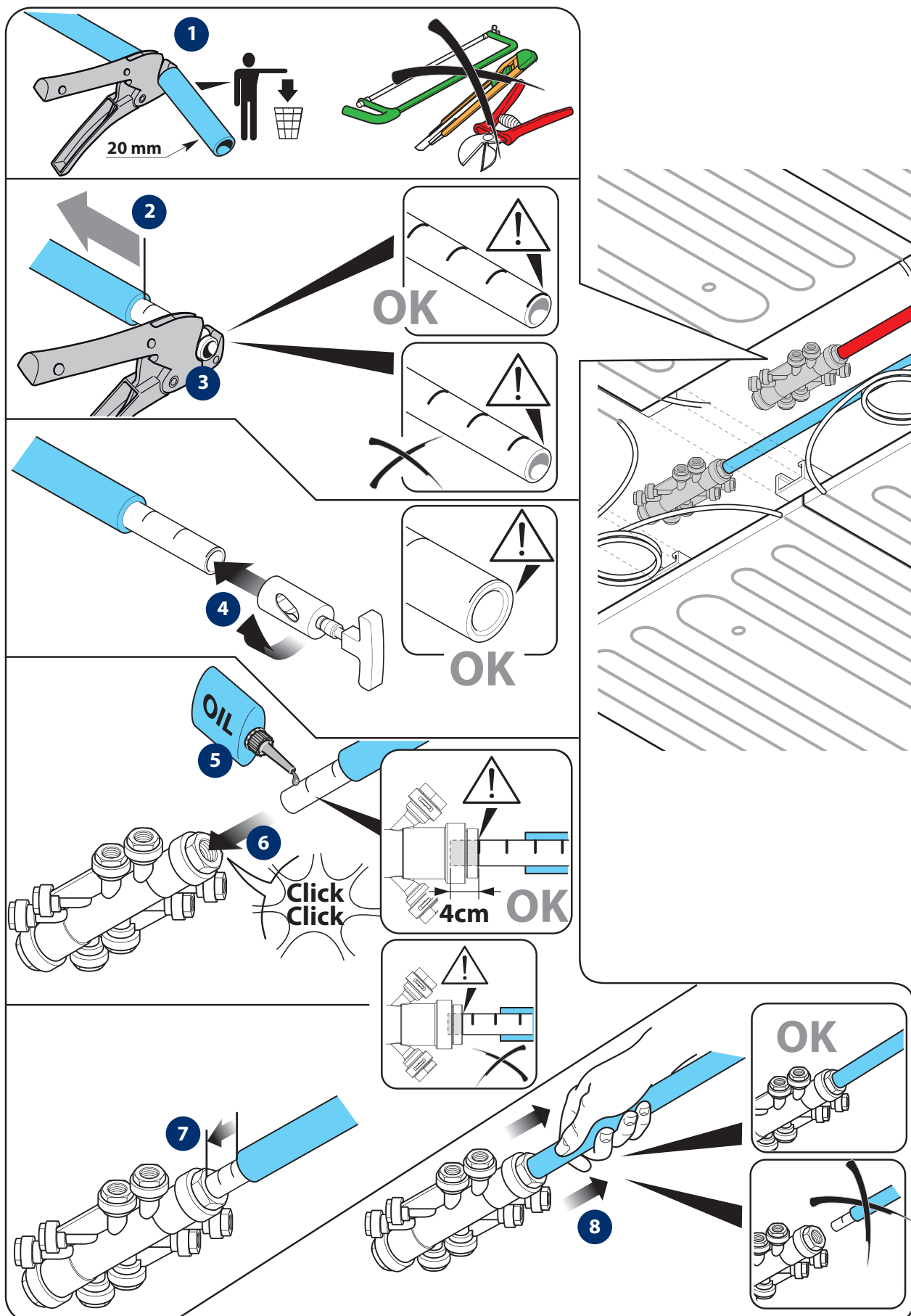
"Hydraulic connections"

"Collegamenti idraulici"

pag. 42

1

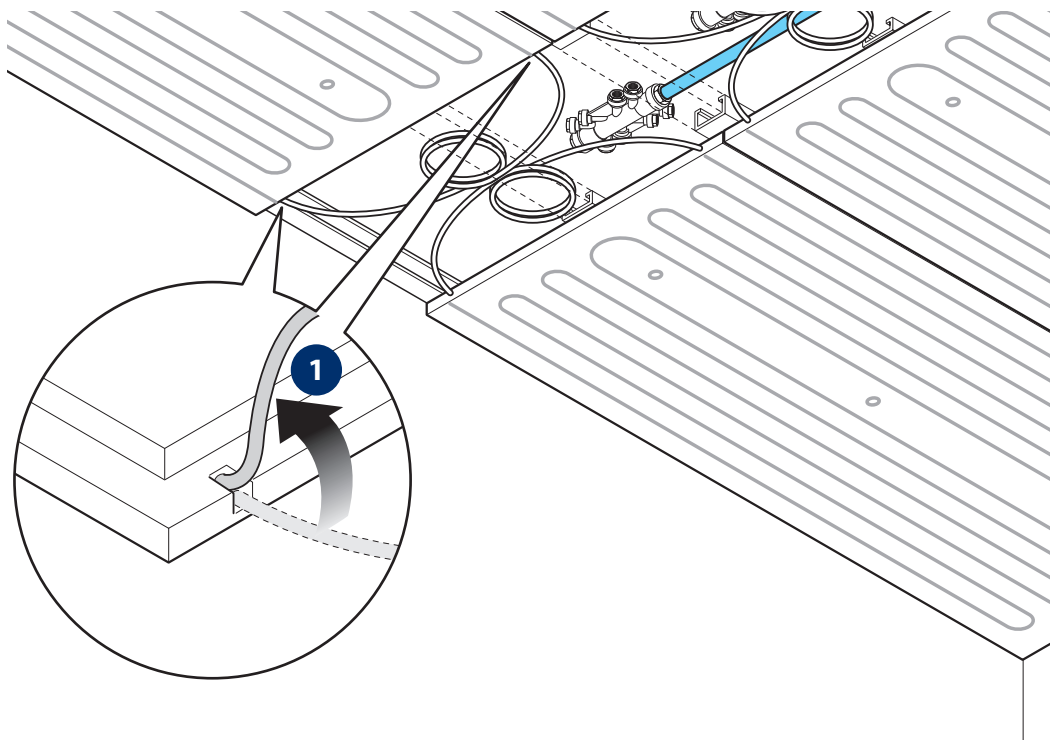
CONNECTION BETWEEN MAIN PIPES AND DISTRIBUTORS COLLEGAMENTI LINEE PRINCIPALI-DISTRIBUTORI



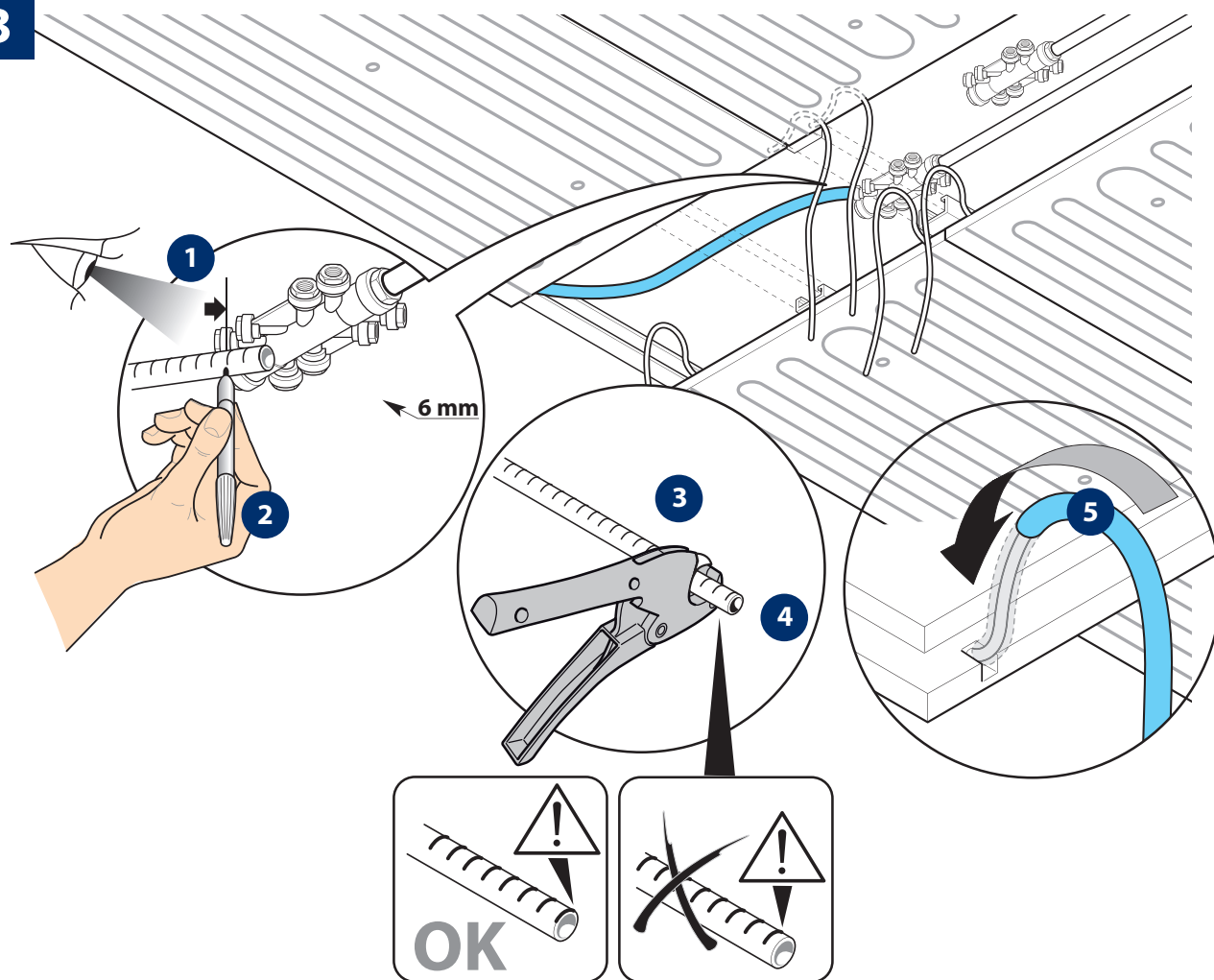


2

CONNECTION BETWEEN PANELS AND DISTRIBUTORS COLLEGAMENTI PANNELLI-DISTRIBUTORI

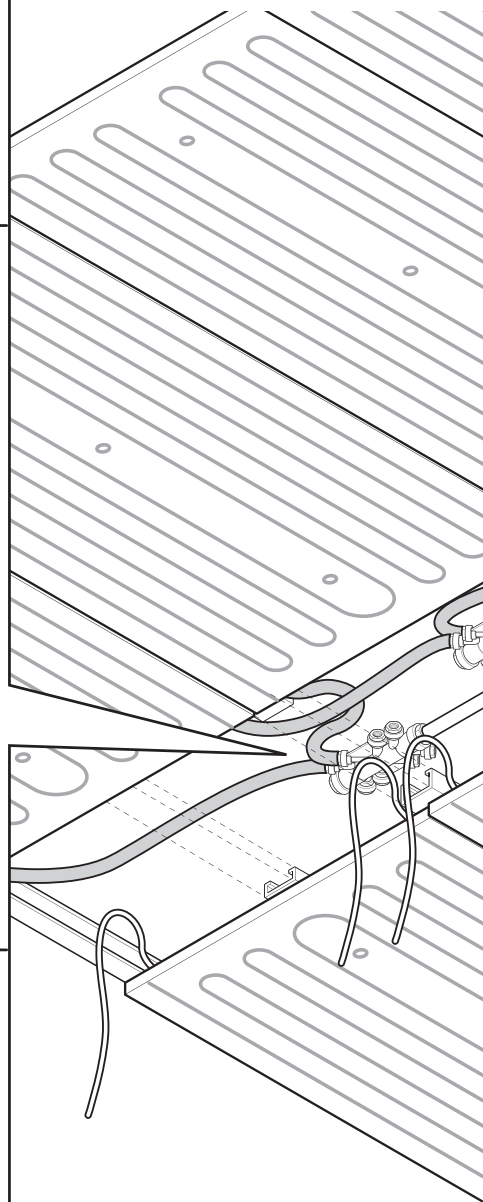
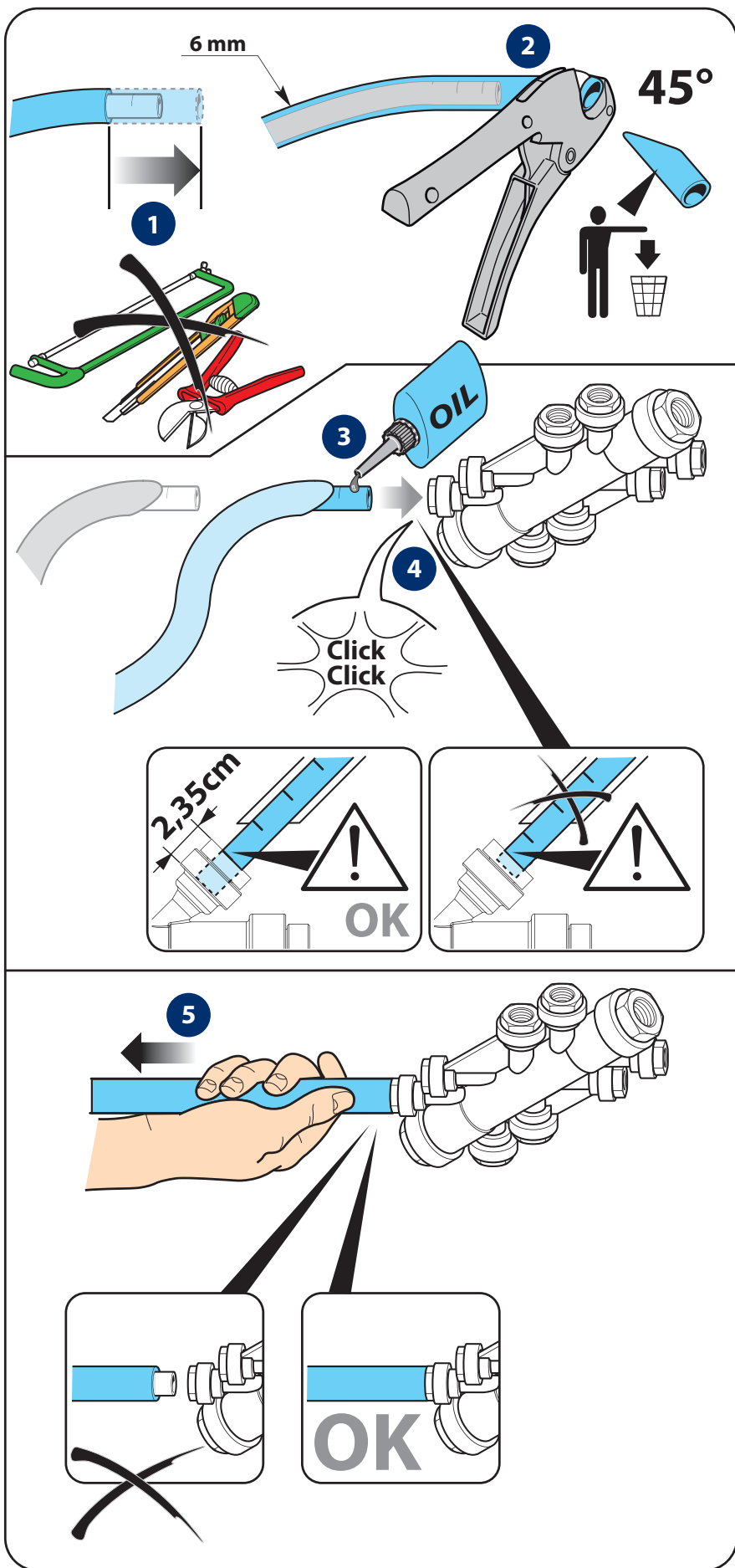


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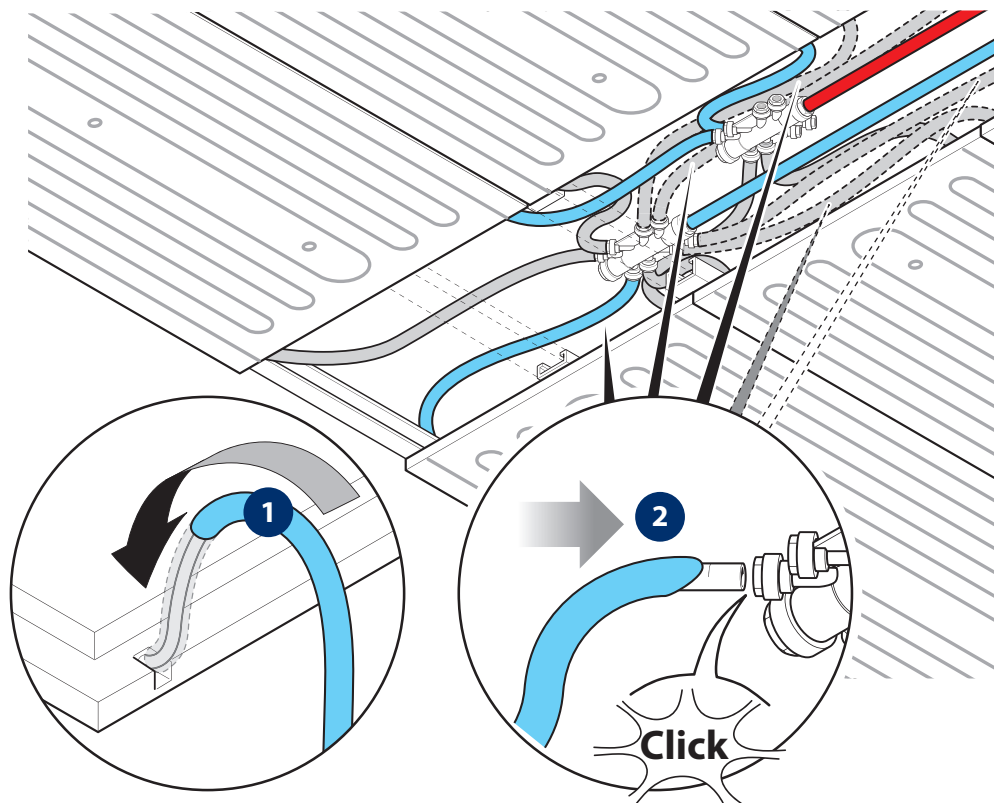


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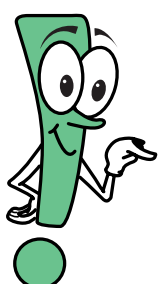
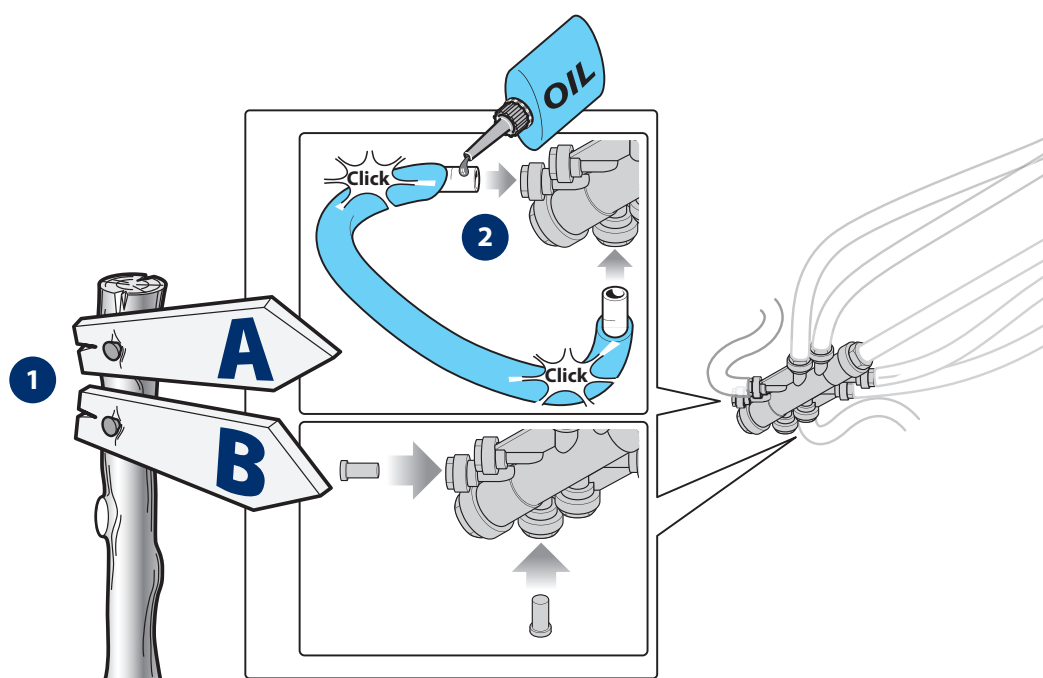


5



6

CLOSE UNUSED OUTLETS
TAPPARE EVENTUALI USCITE NON UTILIZZATE

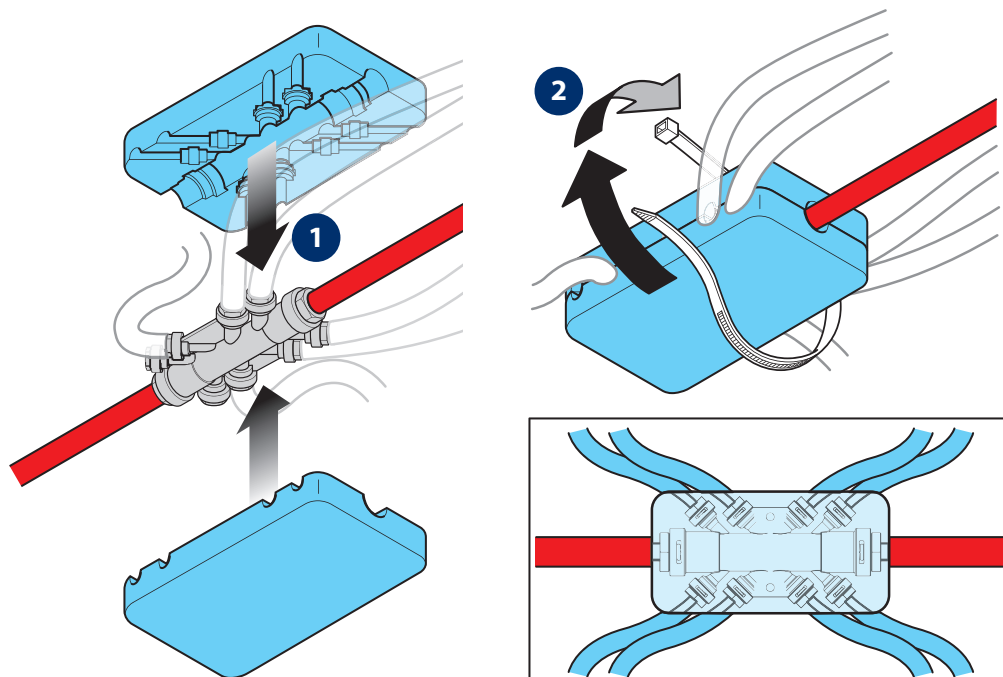


Go on with the installation by consulting the following chapter(s):
Continuare l'installazione consultando i capitoli:

"Testing"	"Collaudo"	pag. 54
-----------	------------	---------

1

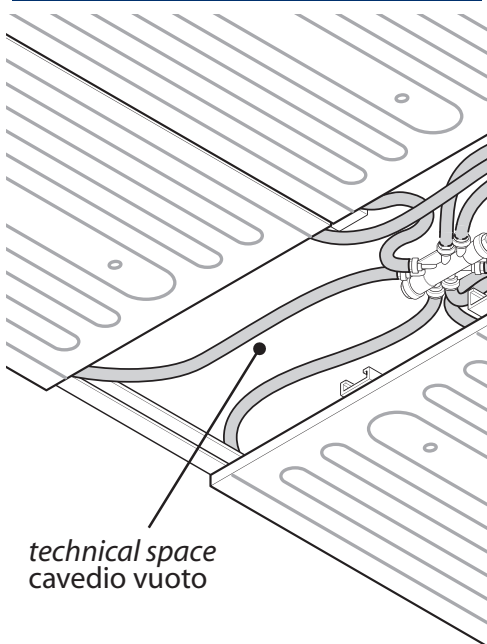
INSTALLATION OF INSULATING SHELLS **INSTALLAZIONE GUSCI ISOLANTI**



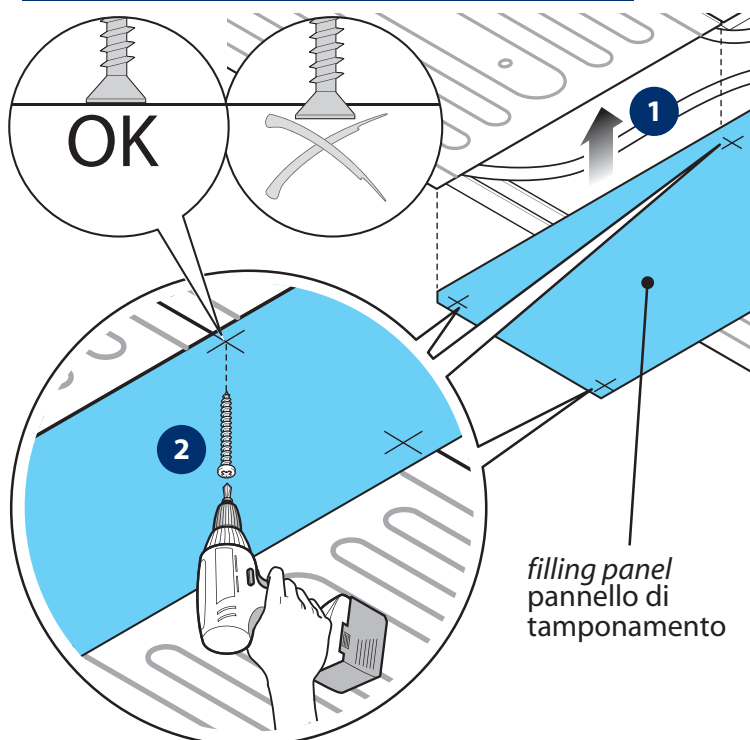
2a

Installation of filling panels before plasterboard ones **Installazione dei tamponamenti prima dei pannelli di cartongesso**

Only for adherent structures
Solo per strutture in aderenza



Only for structures with snap profiles
Solo per strutture con profili a scatto

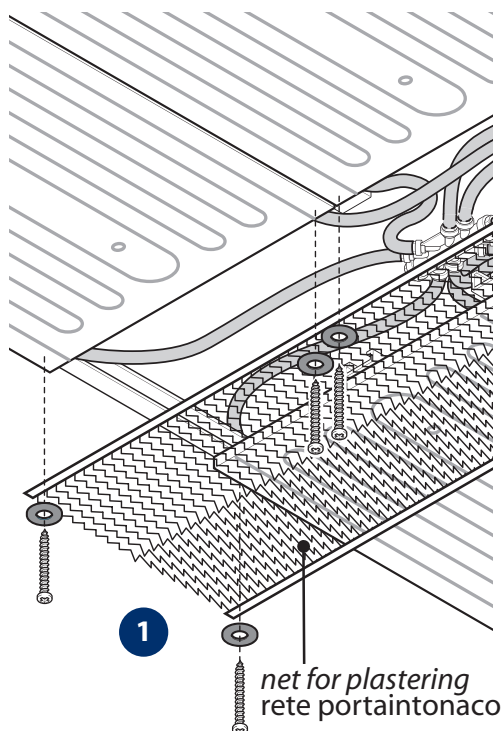


2b

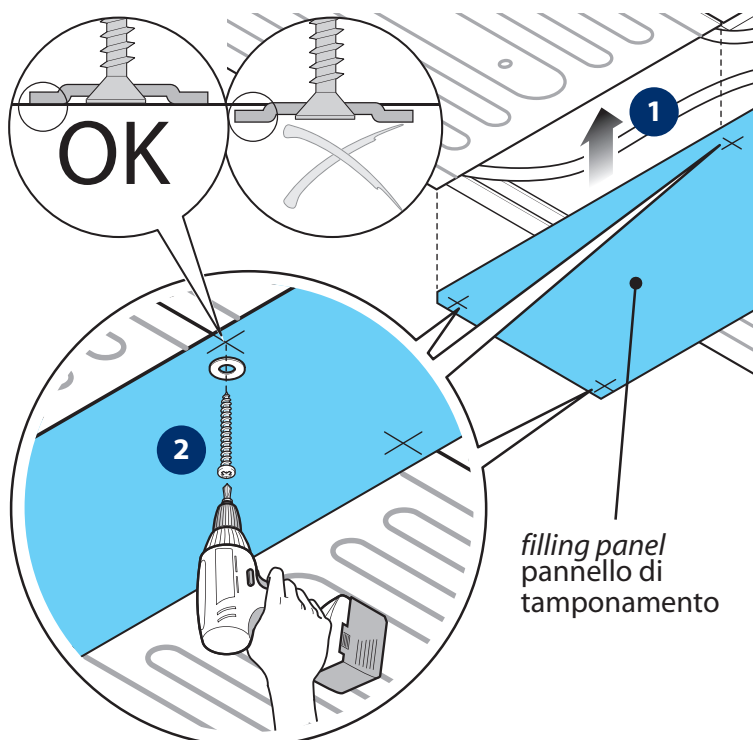
Installation of the filling panels before plastering

Installazione dei tamponamenti prima dell'intonacatura

**Only for adherent structures
Solo per strutture in aderenza**



**Only for structures with snap profiles
Solo per strutture con profili a scatto**

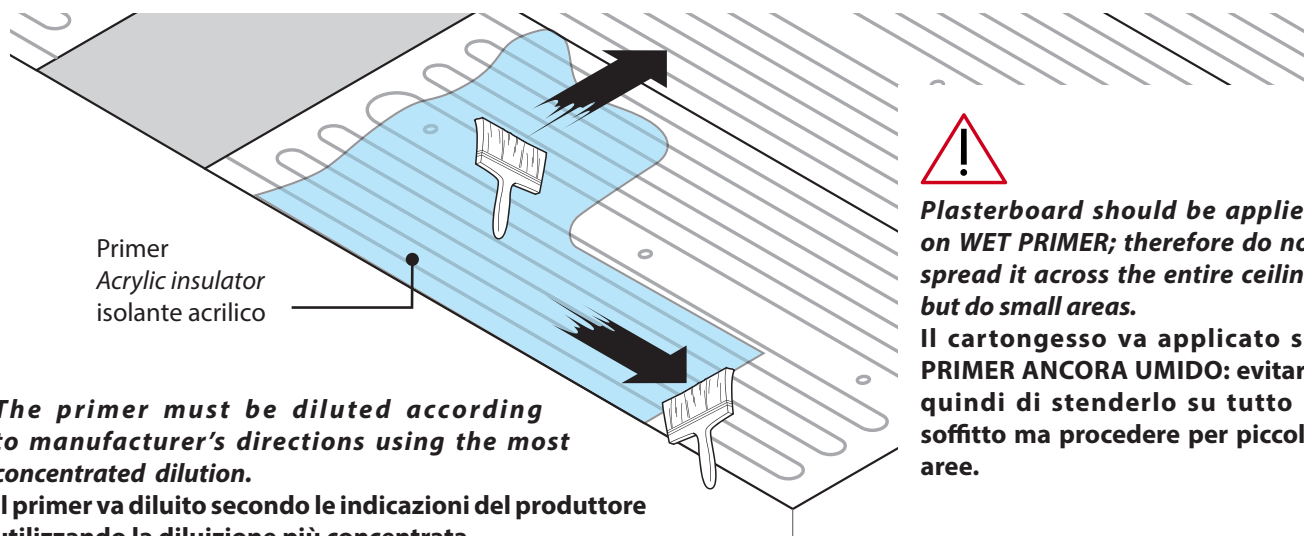


**Finish the installation by consulting the following chapter(s):
Terminare l'installazione consultando i capitoli:**

CEILING - SOFFITTO		
"Covering" "Finiture"	Plasterboard - Cartongesso	pag. 48
	Plaster - Intonacatura	pag. 52

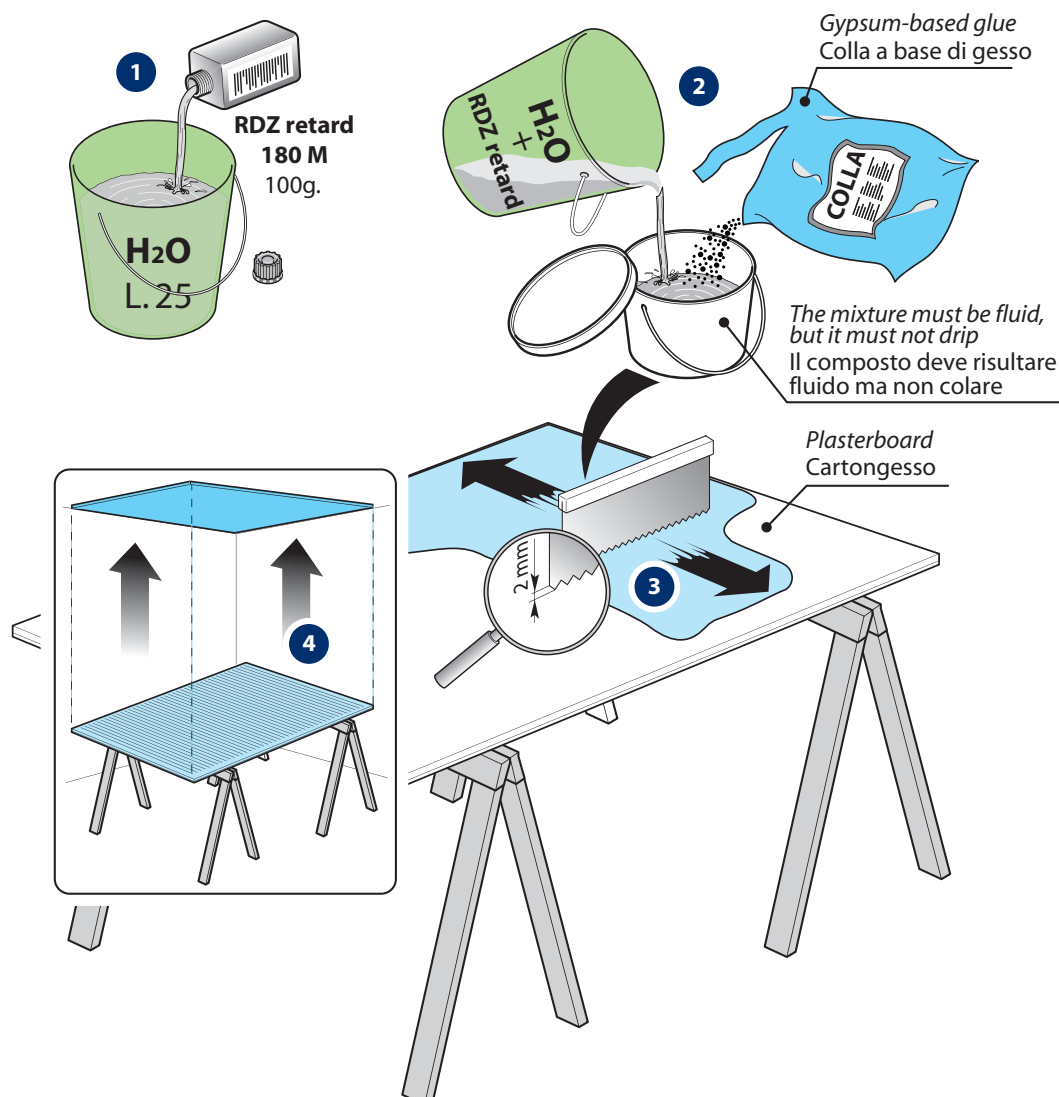
1

PRIMER APPLICATION STESURA PRIMER

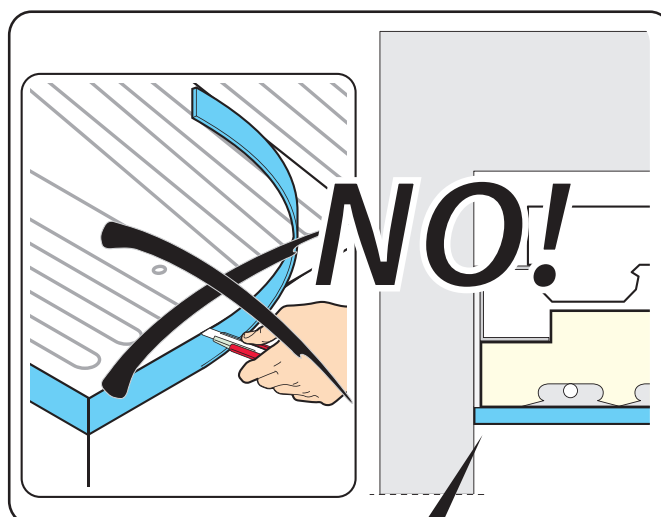
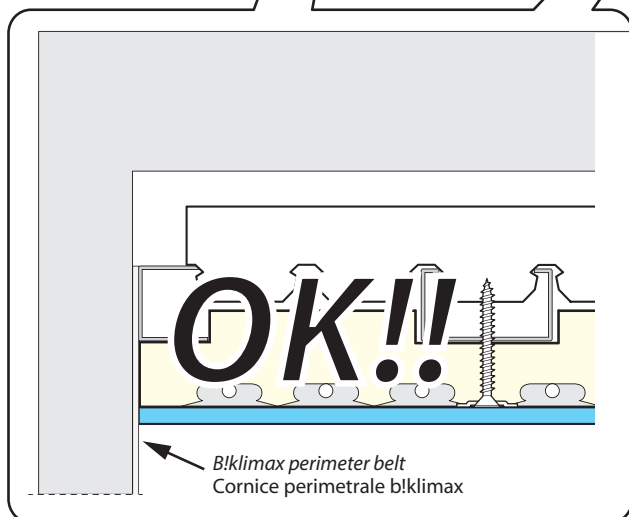
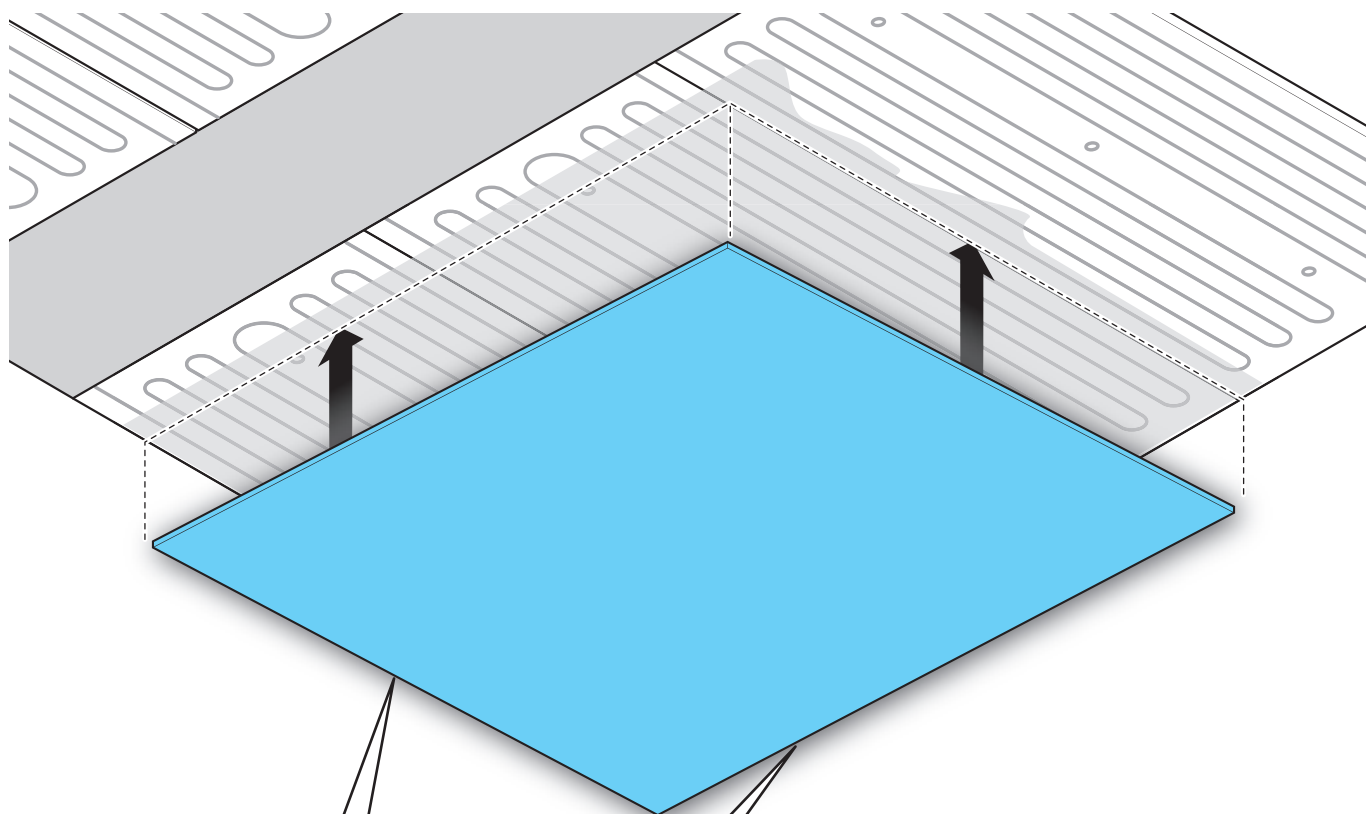


2

PLASTERBOARD INSTALLATION INSTALLAZIONE LASTRE IN CARTONGESSO

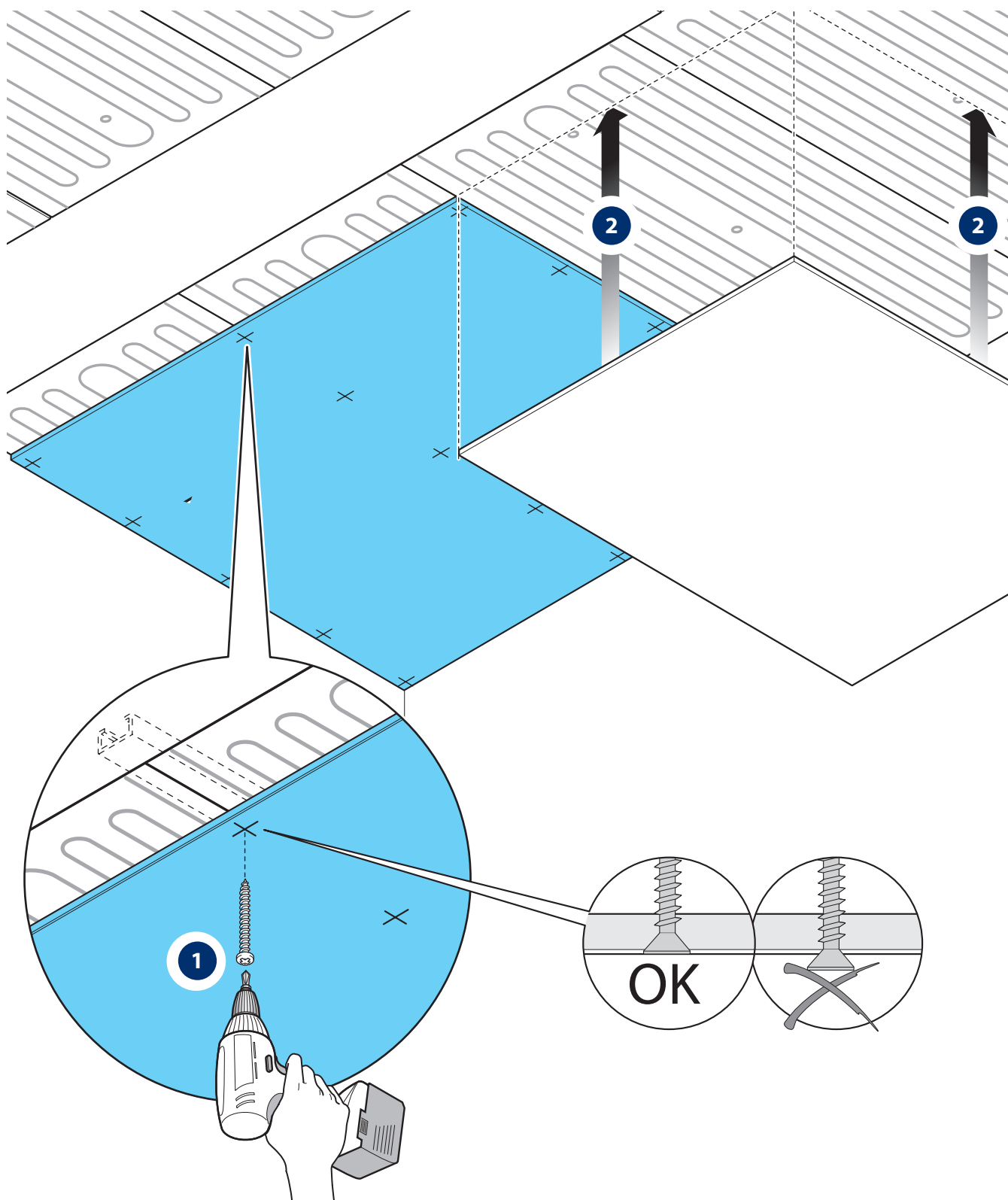


3





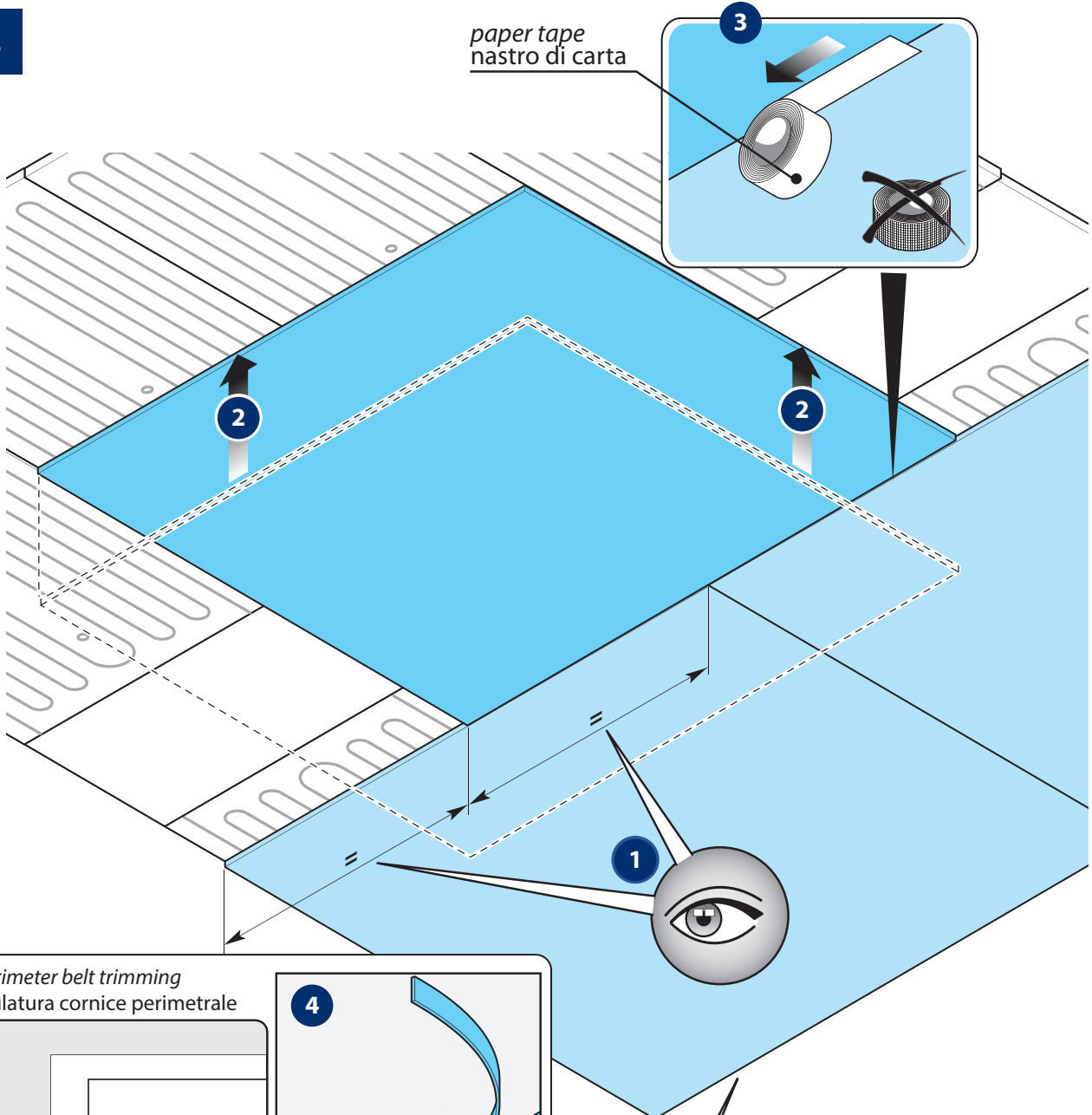
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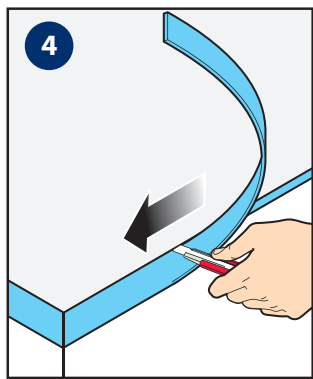
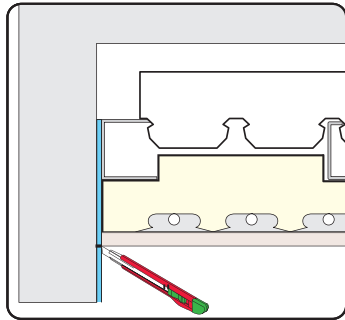


5

paper tape
nastro di carta



Perimeter belt trimming
Rifilatura cornice perimetrale

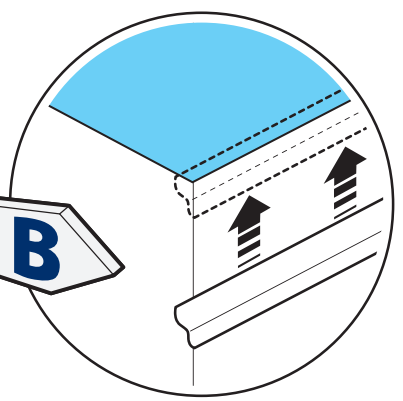


Acrylic
sealant
Sigillante
acrilico



A

B

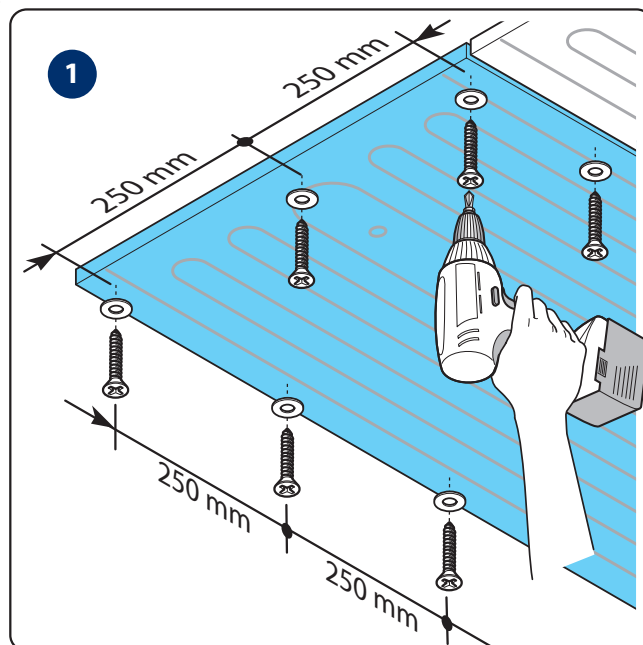
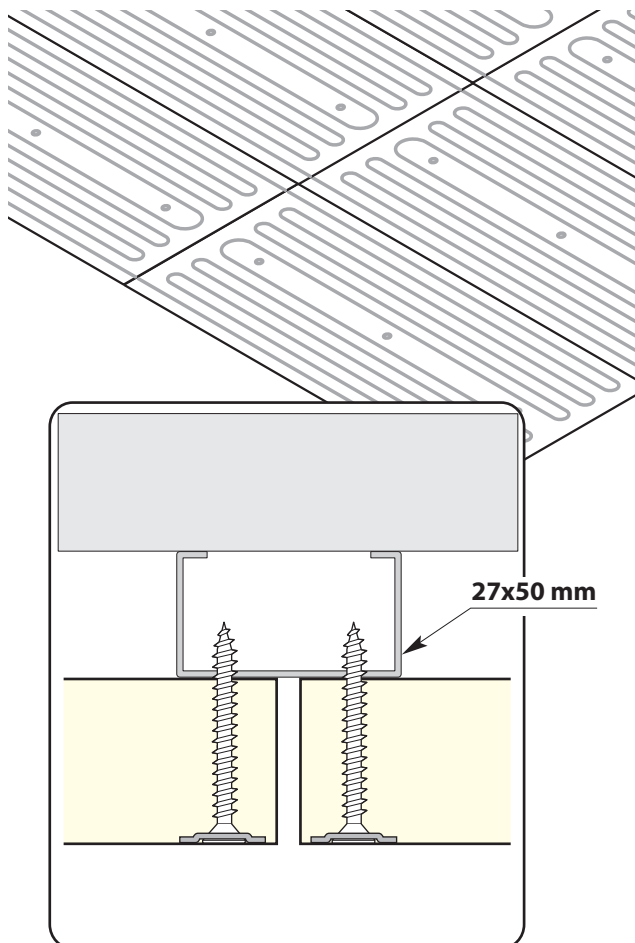


1



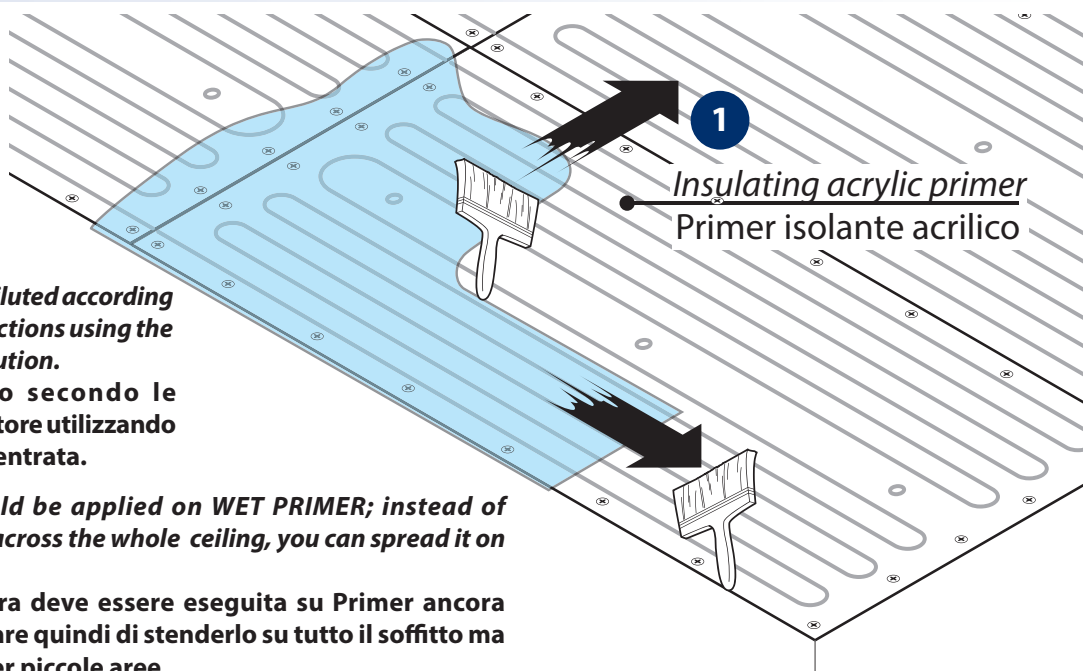
USE WASHERS TO FIX THE PANELS

UTILIZZARE RONDELLE PER IL FISSAGGIO DEI PANNELLI



2

PRIMER APPLICATION
STESURA PRIMER



The primer should be diluted according to manufacturer's directions using the most concentrated dilution.

Il primer va diluito secondo le indicazioni del produttore utilizzando la diluizione più concentrata.

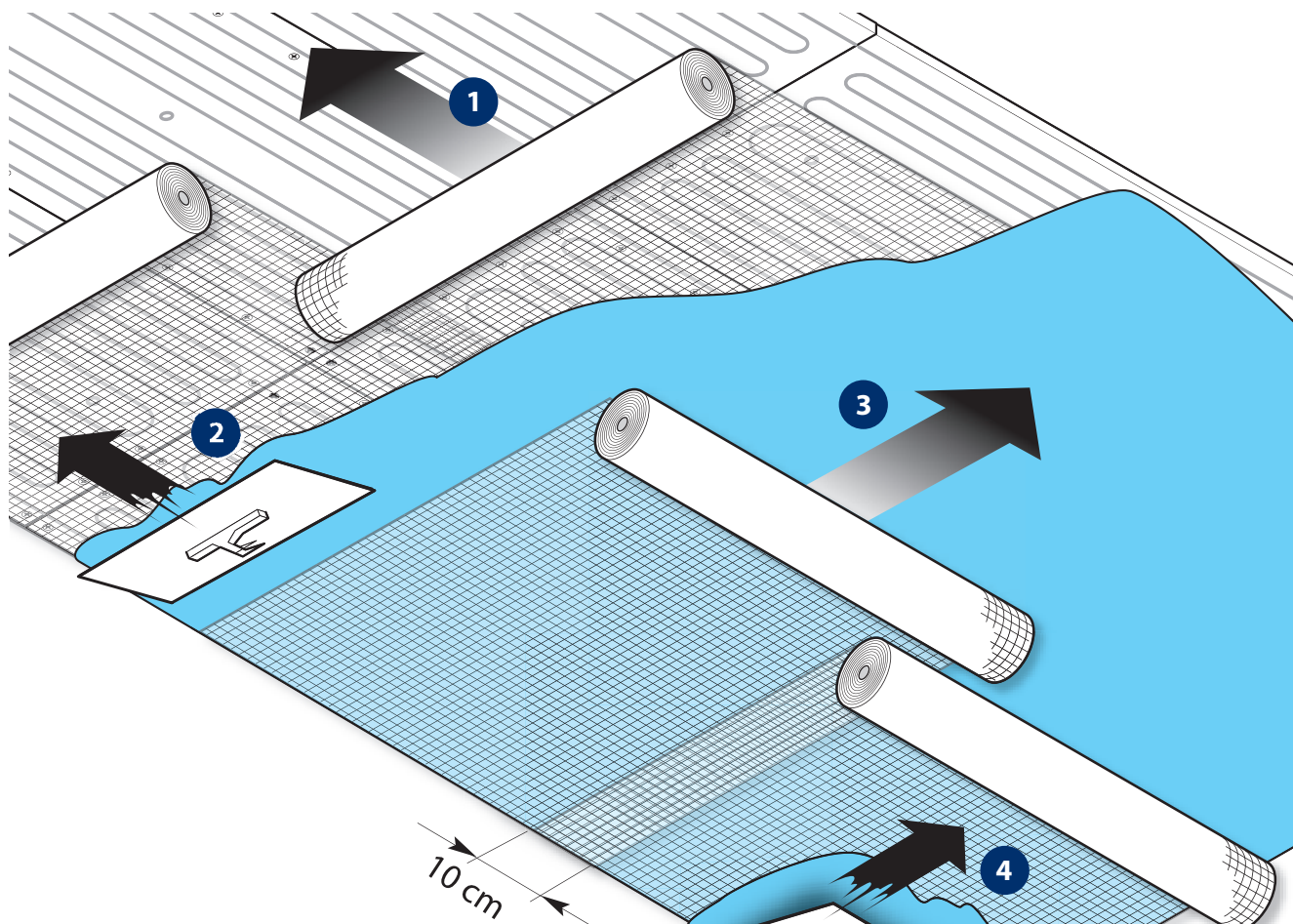
Plaster should be applied on WET PRIMER; instead of spreading it across the whole ceiling, you can spread it on small areas.

L'intonacatura deve essere eseguita su Primer ancora UMIDO: evitare quindi di stenderlo su tutto il soffitto ma procedere per piccole aree.

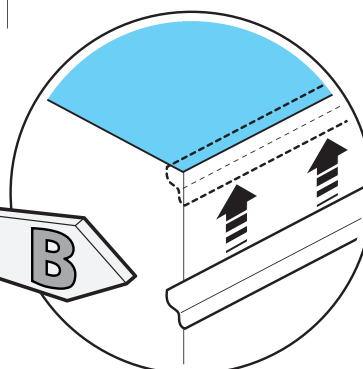
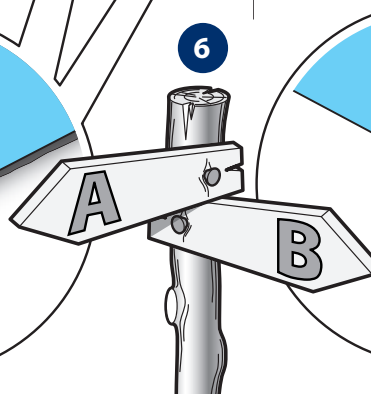
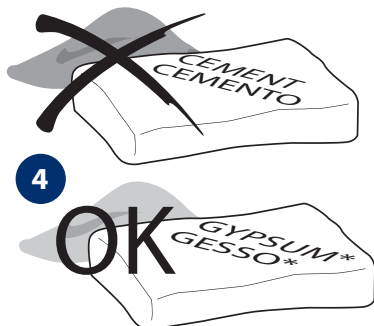
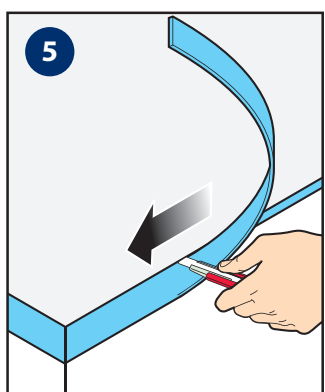
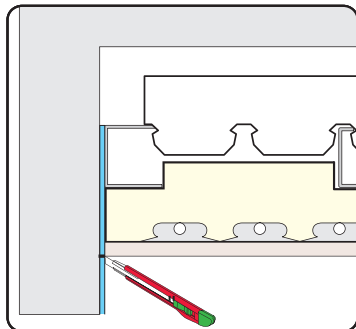


**3**

PLASTER AND MESH APPLICATION STESURA INTONACO E RETE ANTIRITIRO



Perimeter belt trimming
Rifilatura cornice perimetrale



* As alternative: mortar for outside thermal insulation
Come alternativa: malta per cappotti



9 TESTING - COLLAUDO

PRESSURE TESTING AND LEAKAGE CHECKING

MESSA IN PRESSIONE DELL'IMPIANTO E VERIFICA DI EVENTUALI PERDITE



WARNING

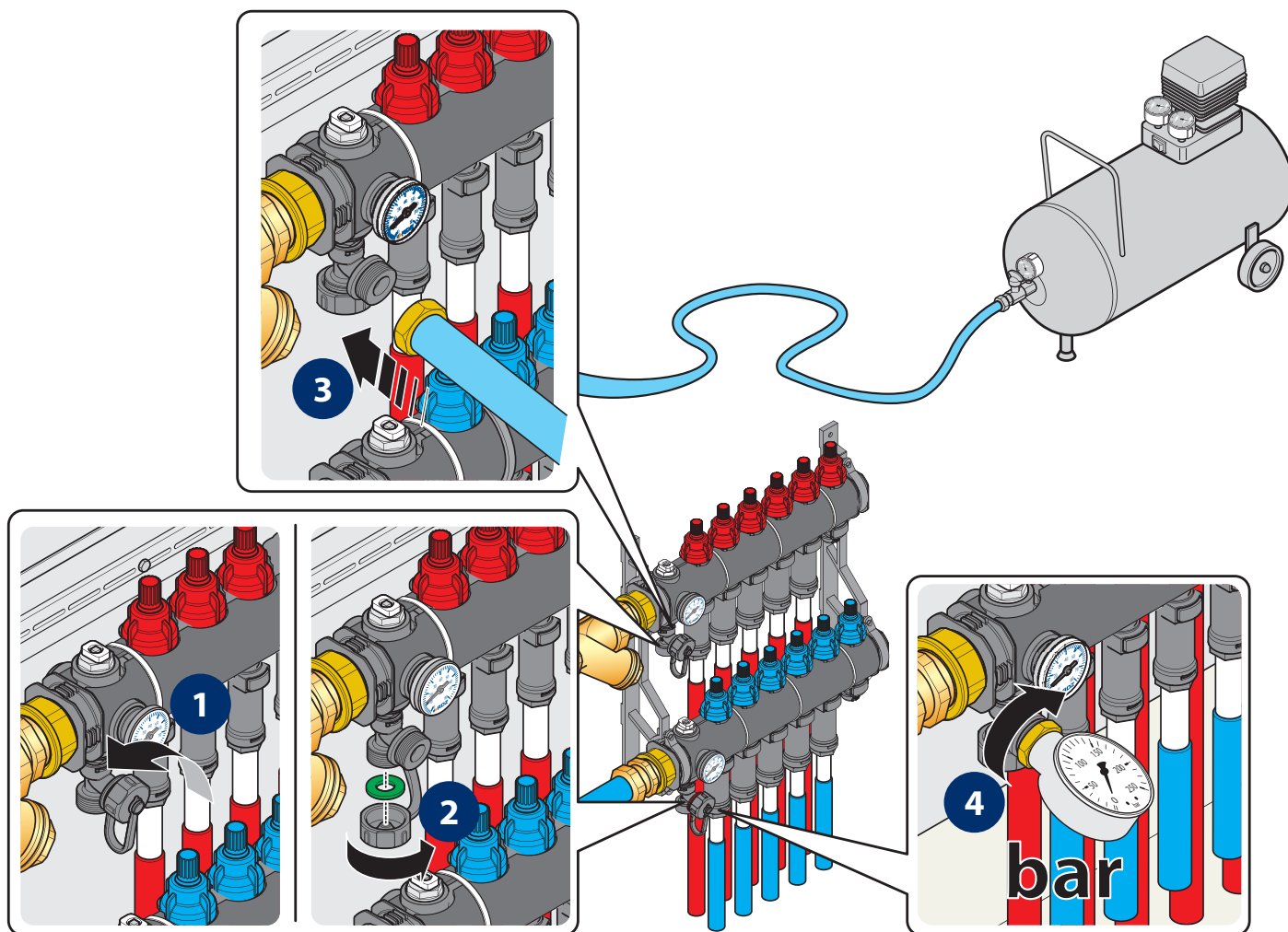
Final testing shall be carried out once all panes have been installed.



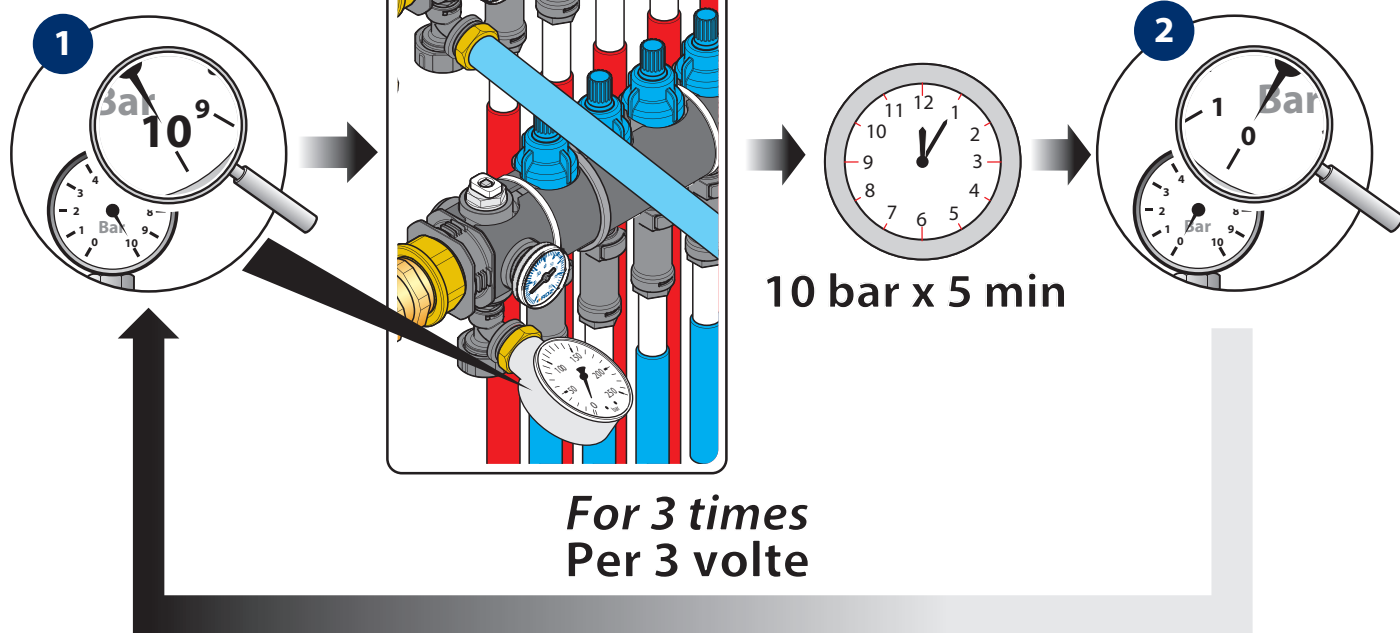
ATTENZIONE

Il collaudo va eseguito dopo il completamento dell'installazione di tutti i pannelli.

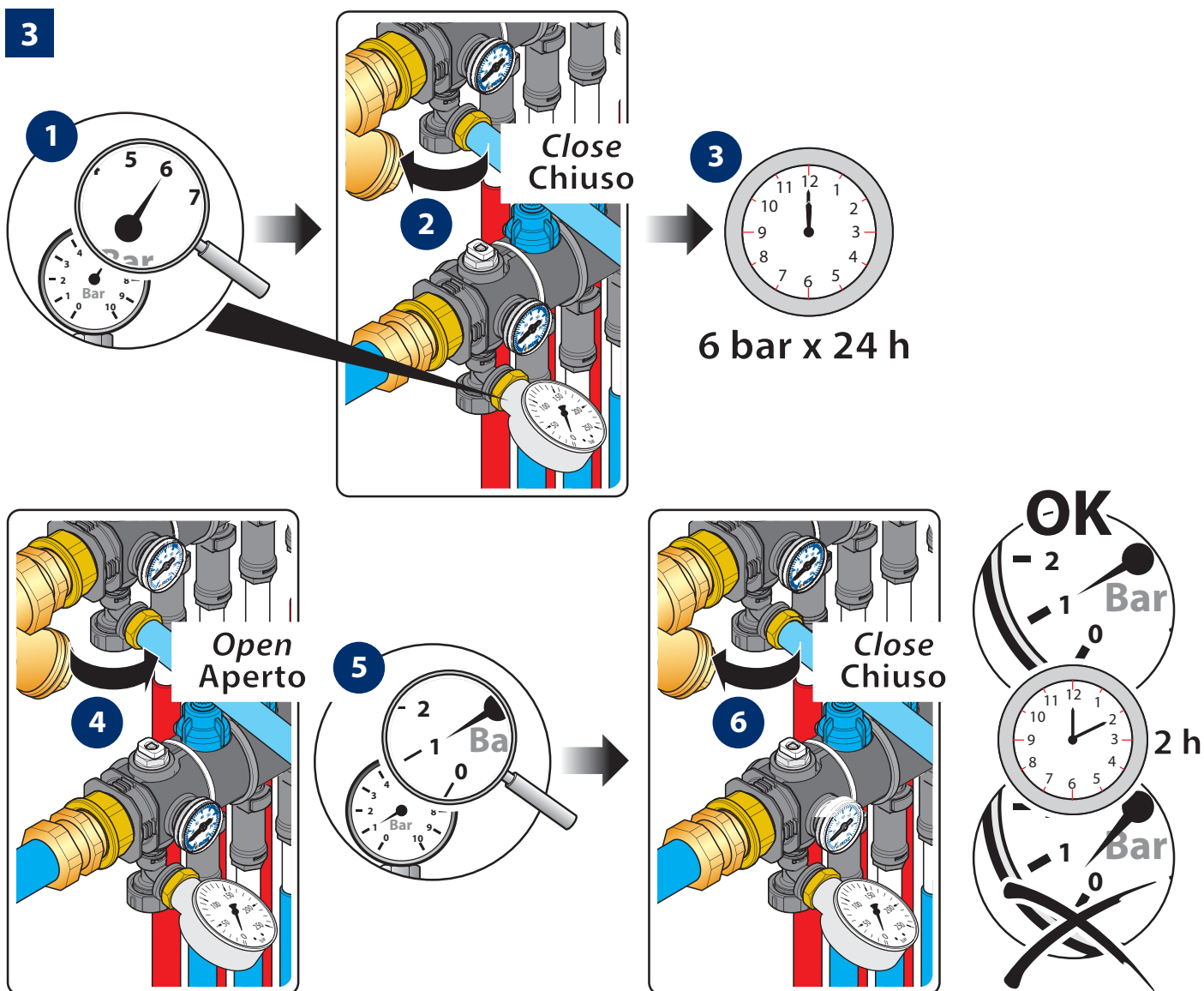
1



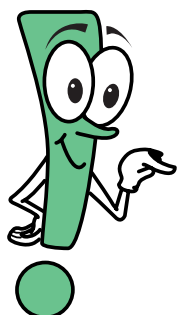
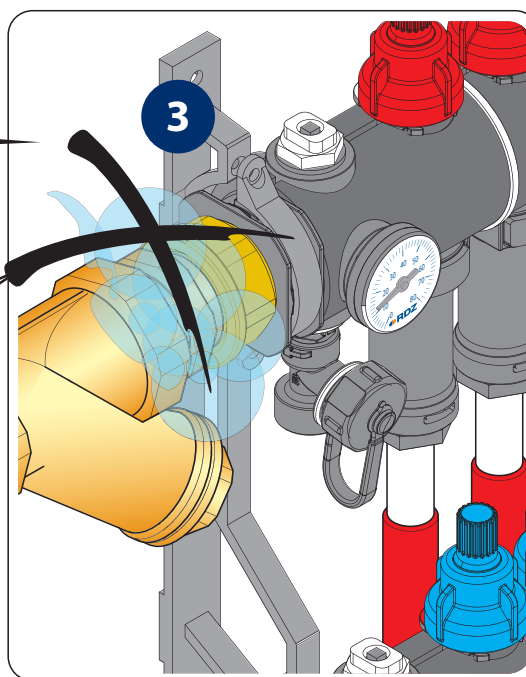
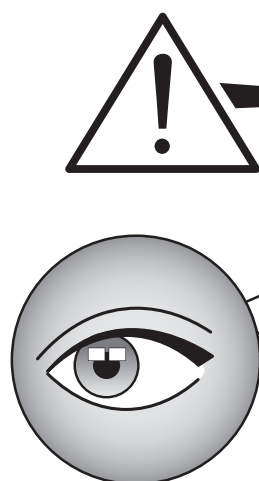
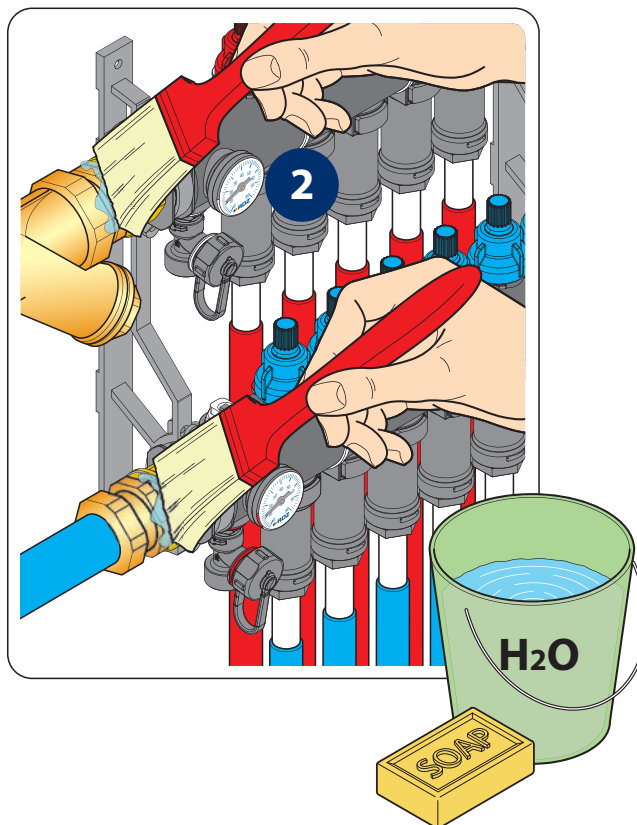
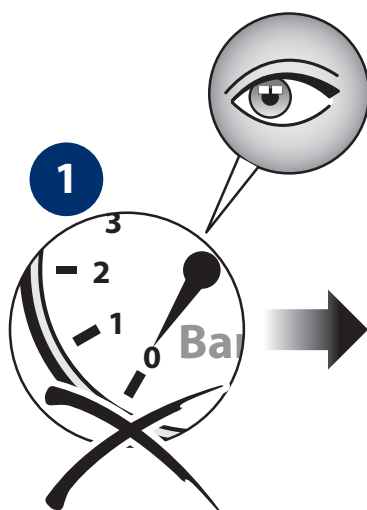
2



3



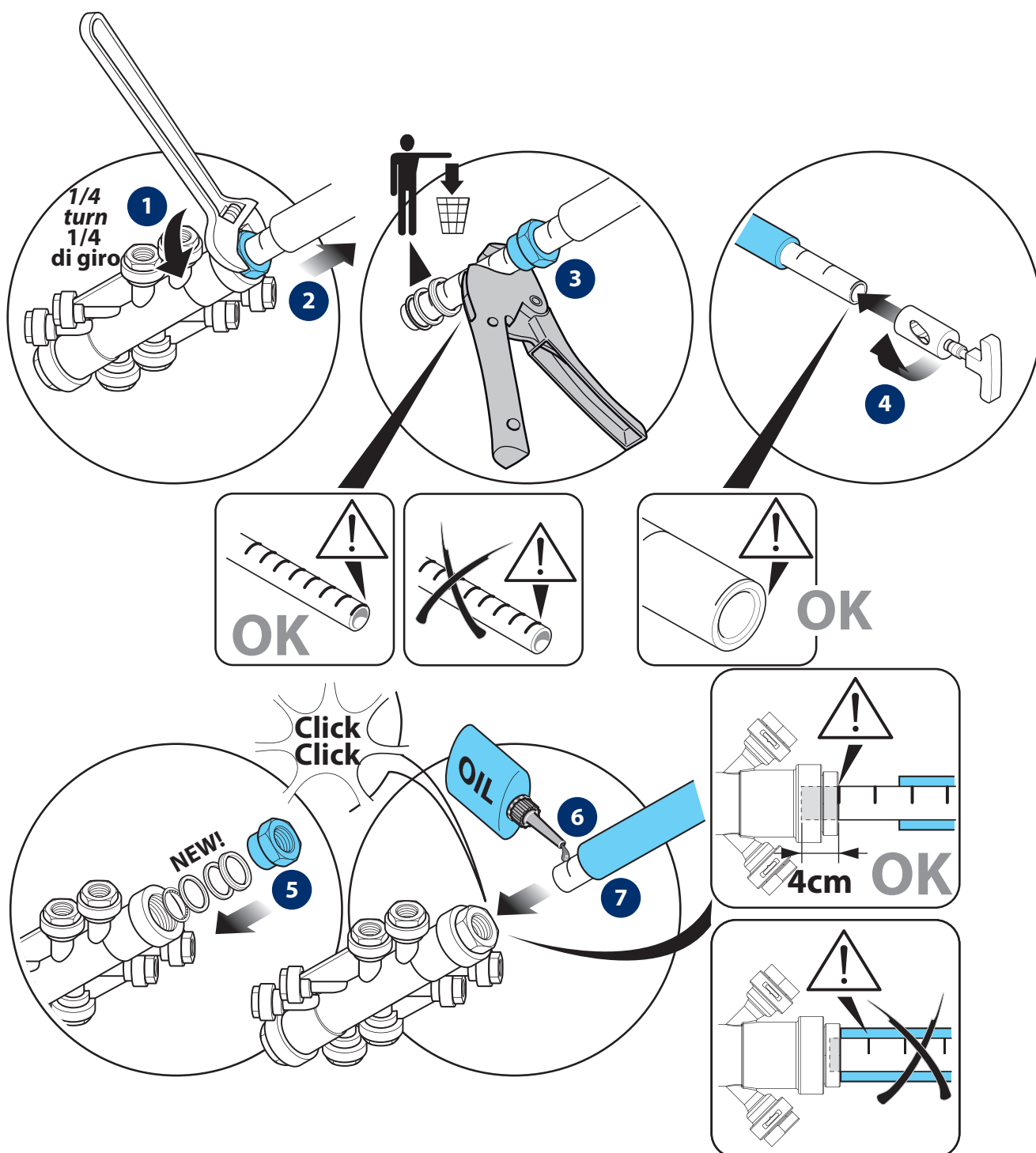
The system must remain under pressure until the coating is completed.
L'impianto deve rimanere in pressione fino al completamento del rivestimento.



Go on with the installation by consulting the following chapter(s):
Continuare l'installazione consultando i capitoli:

CEILING - SOFFITTO				
"Covering"	"Finiture"	pag. 46	Plasterboard - Cartongesso	pag. 48
			Plaster - Intonacatura	pag. 52

PUSH-FIT FITTINGS REPLACEMENT SOSTITUZIONE DEI RACCORDI RAPIDI

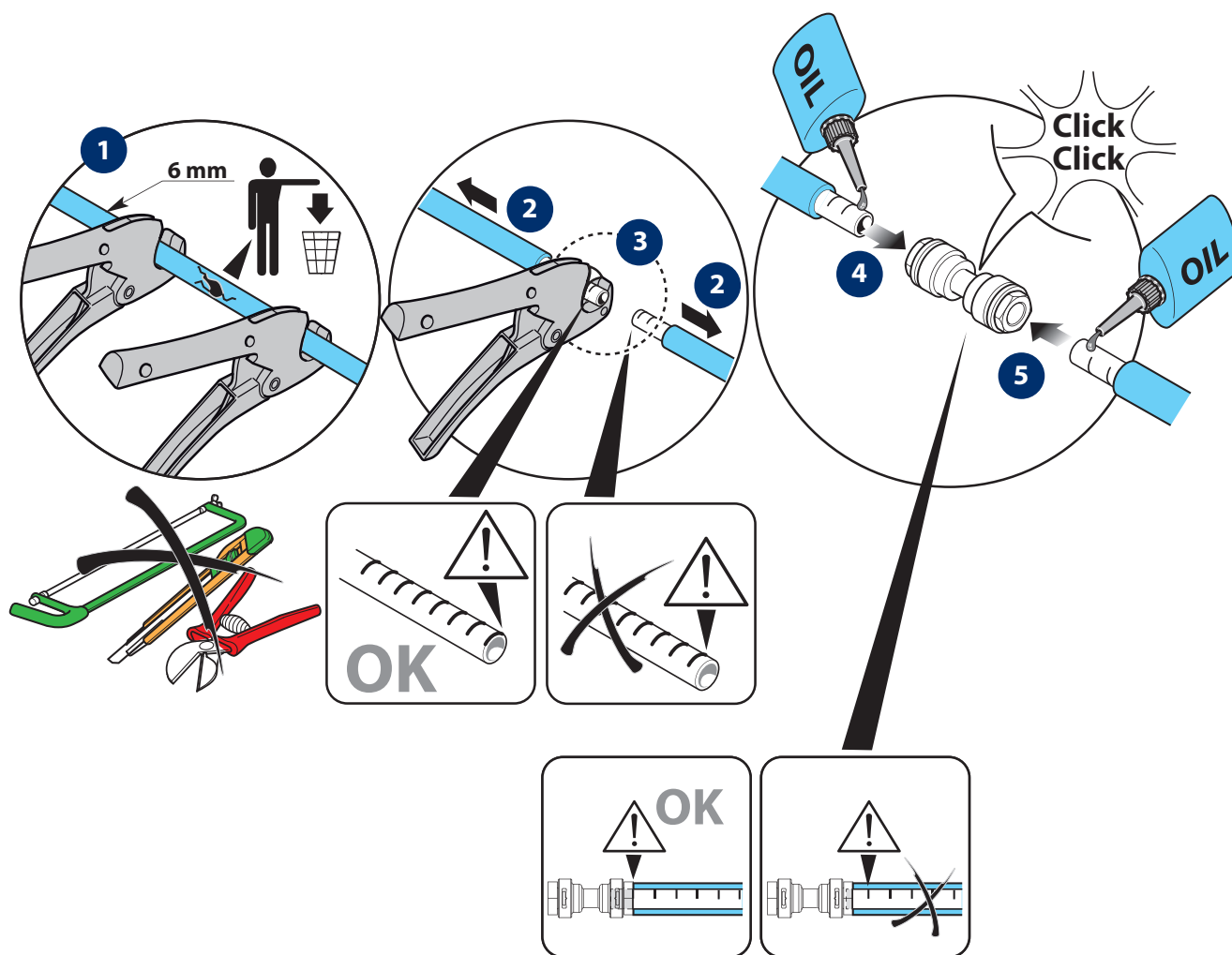




2

REPAIRING FOR DAMAGED PIPE

RIPARAZIONE DI UNA TUBAZIONE DANNEGGIATA



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**COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =**