

加工指南

Processing instructions

爱格复合防火板

EGGER compact laminate



1. 储存 Storage

爱格复合防火板必须储存在一个温度约 18°C-25°C、相对湿度约 50% - 65% 的干燥且封闭的房间内。一旦原始包装被拆除，复合防火板必须储存在水平、平直、稳定的整个护板面上。避免直接接触地面和/或暴露在阳光下。应在复合防火板上下层采用大小尺寸至少相同的饰面板 (非素板) 来进行覆盖保护 (见图 1)。

EGGER compact laminate must be stored in an enclosed and dry room at approximately 18 °C to 25 °C and a relative humidity of approximately 50% to 65%. Once the original packaging is removed, the compact laminate must be stored on full-surface, horizontal, straight, stable protective boards. Direct floor contact and/or exposure to sunlight must be avoided at all times. A laminated protective board (not rawboard) of at least the same format must be used to cover the top and bottom board (see Figure 1).



图 1: 复合防火板水平储存

Figure 1: Horizontal storage of compact laminates

如果无法水平储存，复合防火板应以倾斜大约 80° 的角度依靠储存在一个具有支撑底座的架子上。同样必需使用尺寸大小至少相同的护板 (见图 2 和 3)。

If horizontal storage is not possible, the compact laminate must be stored at an angle of approximately 80° against a full-surface support with counter-support. Using a laminated protective board of at least the same format is required for upright storage as well (see Figures 2 and 3).



图2：复合防火板正确的储存方式
Figure 2: Correct storage of compact laminates



图3：复合防火板不正确的储存方式
Figure 3: Incorrect storage of compact laminates

1.1 操作 Handling

在去除包装且在加工前，必须检查爱格复合防火板是否有可见的损伤。鉴于复合防火板相对较重，在运输和处理时需要特别小心。原则上，运送和/或搬运复合防火板的人士应佩戴个人防护装备，如手套、安全鞋及合适的工作服。复合防火板需被直立抬起。装饰面不应该互相推挤或互相拖拽 (见图 4)。

After removing the packaging and prior to processing, compact laminates should be inspected for visible damage. In view of the relatively heavy weight, special care is required when transporting and handling compact laminates. As a rule, all persons transporting and/or handling compact laminates should wear personal safety equipment such as gloves, safety footwear and suitable work wear. The boards must be lifted. The decor sides should never be pushed against one another or dragged over one another (see Figure 4).

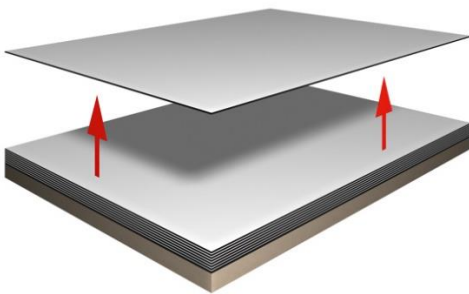


图4：复合防火板的正确抬起方式
Figure 4: Correct lifting of compact laminates

1.2 平衡调节 Conditioning

复合防火板会随着环境条件的变化产生尺寸变化。因此，复合防火板的储存和加工条件应尽可能与随后使用地的气候相接近。在安装之前，复合防火板应在安装地经过足够的时间平衡调整。在建筑工地上也需要遵守同样的储存建议。

Compact laminate reacts to changes in ambient conditions with dimensional movement. For this reason, storage and processing conditions for the elements should correspond as closely as possible to the climate at the subsequent place of use. Prior to installation, compact laminate elements should be conditioned for an adequate period of time at the installation location under the conditions of subsequent use. Compliance with the storage recommendations is required on construction sites as well.

2. 加工 Processing

由于高密度，由此需要较大的切削力，与其它木质材料相比，复合防火板的加工会导致更高的刀具磨损。应使用锋利的锯片，以确保最佳的粉碎效果并可避免气味的产生。主要使用硬质合金刀具。对于大批量的加工和使用自动化加工中心设备时推荐使用金刚石刀具。确保刀具的刀片保持在良好的状态，以获得满意的结果。为了确保经济化加工，特别是在进行大批量的生产或执行具有挑战性的项目之前，建议咨询刀具制造商关于最佳刀具的选择。

Due to the high density and the high cutting forces that arise, the processing of compact laminates leads to shorter tool life compared to other wood-based materials. Sharp blades should be used to ensure optimal shredding and to avoid odour generation. Mainly carbide tools are used. Diamond-tipped tools are recommended for processing large quantities and when used in automated processing centres. Ensure that the tool blades are maintained in good condition to obtain satisfactory results. To ensure economical fabrication, especially prior to processing a large production batch or implementing challenging projects, it is advisable to consult manufacturers on the most appropriate tool selection.

2.1 除尘系统 Extraction system

粉尘的产生对健康的危害

Health hazard due to dust generation

在加工期间可能会产生粉尘。有皮肤致敏和对呼吸道产生影响的风险。根据加工工艺和颗粒大小，尤其当吸入粉尘后，会产生进一步的健康风险。

Dust may be produced during processing. There is a risk of sensitising the skin and respiratory tract. Depending on the processing and the particle size, especially in the case of inhalation of dust, there may be further health hazards.

在评估车间风险时必须将粉尘的形成考虑在内。尤其在机械加工过程中（如锯切、刨平、铣削），必须使用满足健康和安法规则的有效除尘系统。如果没有足够的吸尘系统，必须配备合适的呼吸保护装备。

The generation of dust must be taken into account when assessing the risks at the workplace. Particularly in the case of machining processes (e.g. sawing, planing, milling), effective extraction must be used in accordance with the applicable occupational health and safety regulations. Suitable breathing protection has to be worn if no adequate extraction system is in place.

火灾和爆炸风险

Fire and explosion hazard

在加工过程中粉尘的产生会导致火灾和爆炸的风险。必须遵守安全和防火法规。

Dust generated during processing can lead to fire and explosion hazards. Applicable safety and fire protection regulations must be observed.

2.2 切割成型和转孔 Formatting and drilling

建议使用板锯或推台锯将复合防火板切割到一定尺寸。为了获得良好的切削效果，需要考虑齿数 (Z)、切削速度 (vc) 和进给速度 (vf) 之间的关系。在施工现场进行精加工时，可以使用具有合适导轨的导轨锯。

The use of panel or sizing saws is recommended for cutting compact laminate to size. In order to obtain a good cutting result, the relationship between number of teeth (Z), cutting speed (vc), and the feed rate (vf) should be taken into account. For finishing on the construction site, plunge saws and a suitable guide rail can be used.

以下请注意:

Please bear in mind:

- 可见面 (装饰面) 朝上 Visible side (decor side) up
- 正确的刀具突出 Pay attention to the correct saw blade projection
- 根据进给速度调整转速和齿数 Adjusting the number of revolutions and number of teeth to the feed speed
- 为在板底部获得干净切口，推荐使用线锯片
- The use of a scoring circular blade is recommended to obtain clean cuts on the bottom of the board

根据锯片突出的不同以及进入和退出角度的变化，因此切边的质量也会发生变化。如果上切边不干净，则必须将锯片调高。如果底部切割不干净，锯片必须放低。必须确定最佳的刀具设置高度。

Depending on saw blade projection, the entry and exit angle change, and thus also the quality of the cut edge. If the upper cut edge becomes unclean, the saw blade must be set higher. The saw blade must be set lower in case of an unclean cut on the bottom. The best height setting must be identified.

金刚石刀具被推荐用于加工复合防火板。硬质合金刀具的适用性有限。尽量不要使用分段式刀片的刀具，因为重叠区域的过度切割痕迹通常仍然可见。

Diamond-tipped tools are recommended for processing compact laminate. The suitability of carbide-tipped tools is limited. Tools with segmented blades should not be used as far as possible, as the overcut in the overlap zone usually remains visible.

由于较高的切削压力，安全的工件和刀具控制尤为重要。许多边缘铣削选项是可适用的。铣削的残余痕迹可通过砂磨去除。均匀的边部颜色可以通过施加无硅油来实现。尖角和棱角应磨圆，以消除受伤的风险。以下是适用于处理爱格复合防火板的无硅油，例如：Innotec 的 Innoplast 保护剂或市售亚麻籽油。

Because of the high cutting pressure, secure workpiece and tool control is of particular importance. Numerous edge profiling options are available. Remaining signs of milling can be removed by sanding. An even edge colour can be achieved by applying a silicone-free oil. Sharp corners and edges should be rounded to eliminate the risk of injury. The following are suitable for the treatment of EGGER compact laminates with silicone-free oils, for example: Innoplast Protector from Innotec or commercially available linseed oil.

为塑料片材设计的钻头是复合防火板钻孔的最佳选择。请遵守刀具厂家的规范要求。也可以使用钻金属或木材的螺旋钻头，但转速和进给速率必须降低

Drill bits designed for plastic are best suited for drilling compact laminates. Please observe the specifications of the tool manufacturer. Twist drill bits for drilling metal or wood can also be used, however, the rotational speed and feed rate must be reduced.



图 5: 转孔距板边的最小边距

Figure 5: Minimum distances of the drill holes to the edge of the board



对于通孔，复合防火板应该放在一个可以支撑钻头往下钻的坚实底座上。确保钻屑能较好的去除。在钻头钻穿之前，应降低进给速度，以避免破坏钻穿侧。对于非通孔，即所谓的盲孔，必须保留的最小板厚为 1.5 毫米。对于平行于板面的钻孔，必须保持在钻孔两侧的最小板厚为3mm (见图5)。需要根据刀具供应商的建议来选择切割、铣削和钻孔刀具。

For through-holes, the compact laminate should be resting on a solid base which can be drilled into. Good removal of the drilling chips must be ensured. Before the drill bit breaks through, the feed rate should be reduced in order to avoid break-outs on the exit side. For drill holes that do not go through, so-called blind holes, the minimum board thickness that must be kept is 1.5 mm. For drill holes parallel to the board surface, the minimum board thickness that must be kept on either side of the drill hole is 3 mm (see Figure 5). Cutting, milling and drilling tools should always be selected in coordination with the tool manufacturer.

>> 更多信息，请参照以下网址关于爱格复合防火板的刀具推荐及加工说明：www.egger.com/compactlaminate

For further information, please refer to the processing and tool recommendations of EGGER compact laminates at www.egger.com/compactlaminate

3. 加工 Processing

尽管复合防火板具有良好的尺寸稳定性，但环境条件的变化会导致尺寸的移动。纤维芯层的方向为复合防火板提供了生产或加工方向。(见图 6)

Notwithstanding the good dimensional stability of compact laminate, changes in the ambient conditions can result in format changes. The orientation of the fibres in the core paper gives the compact laminate a production or running direction (see Figure 6).

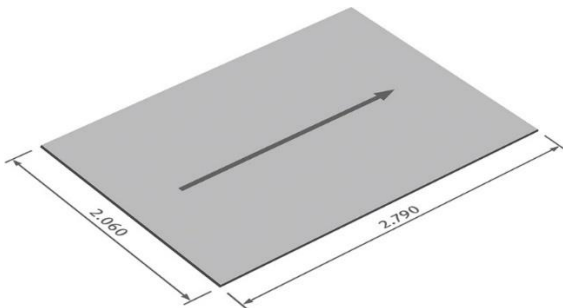


图6：复合防火板的生产或进给方向

Figure 6: Production or running direction of the compact laminate

尺寸在纵向上的变化大约是横向变化的一半。尺寸的改变必须从设计和加工的一开始就要考虑到。一般来说，应提供 2.0 mm / m 的膨胀间隙。复合防火板元件前后不同的环境条件会导致翘曲。因此，复合防火板墙板安装总是为板的后部提供足够的通风条件，使温度和湿度保持平衡。

Format changes are approximately half as large in the longitudinal direction as in the crosswise direction. Format changes have to be taken into account from the outset in design and processing. As a rule, an expansion play of 2.0 mm/m should be taken into account. Different climate conditions in front of and behind the compact laminate elements can lead to warpage. It is therefore essential that compact laminate wall cladding installations always make provision for adequate ventilation to the rear of the boards, which allows temperature and humidity to equalise, as well as acclimatisation.

双饰面复合防火板生产方向

The production direction of double-sided decorative

生产方向只能根据产品尺寸来区分识别。木质和定向印刷花色例外。当使用切割成型的板材时，在安装过程中应确保生产方向始终匹配。考虑到切割成型的板有相互混淆的风险，应在板材剩余物上标明机器进给方向。

compact laminates can often only be identified from the production dimensions. Woodgrains and directionally printed decors

constitute an exception. When working with cut-size panels, it is important to ensure that the production direction is always matched up during installation. In view of the risk of confusion with cut-to-size boards, the running direction should be marked on board leftovers.

注意:

Attention:

- 考虑到 2.0 mm/m 的膨胀率 - 复合防火板的安装其尺寸运动必须始终不受约束
Take into account an expansion play of 2.0 mm/m – the installation of compact laminates must always be carried out without constraints
- 确保充足的背后通风 – 必须在复合防火板前部和后部创造一个平衡的含水率
Execution with sufficient rear ventilation – compact laminates must be able to create a balance moisture on the front and back
- 当安装切割成型的部件时, 应确保相邻部件具有相同的生产加工方向
When installing cut-to-size parts, ensure the same direction of production

3.1 切口 Cut-outs

切口和孔, 例如开关、通风格栅或通道开口, 须总是圆形的, 因为尖角会导致裂缝的形成 (见图 7 和图 8)。内角应以至少 5 毫米的内半径切割。所有的边缘必须光滑, 没有裂缝和缺口。凹槽和缩缘口也必须是圆的, 以避免缺口裂纹。切口可以直接用刨铁机或预先钻取一个适当的半径, 然后从一个钻孔锯到另一个钻孔。集成式部件必须留有足够的膨胀间隙。

Cut-outs and recesses, for example for switches, ventilator grilles or access points, must always be rounded off, as sharp-edged corners can lead to cracking (see Figures 7 and 8) below. Inside corners should be cut with an inner radius of at least 5 mm. All edges must be smooth, free of cracks and notches. Grooves and rebates also have to be rounded to avoid notch cracks. Cut-outs can be made directly with a router or pre-drilled with an appropriate radius and then sawn out from drill hole to drill hole. Sufficient expansion gaps must be allowed for integrated components.

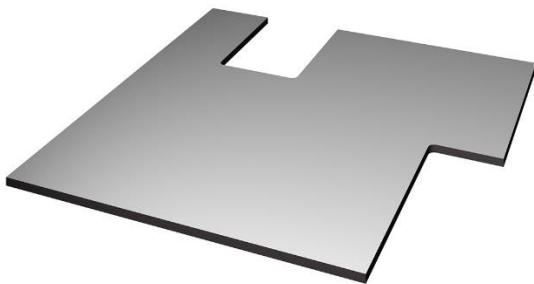


图 7: 5 mm 半径的转角
Figure 7: Corners with a radius of 5 mm

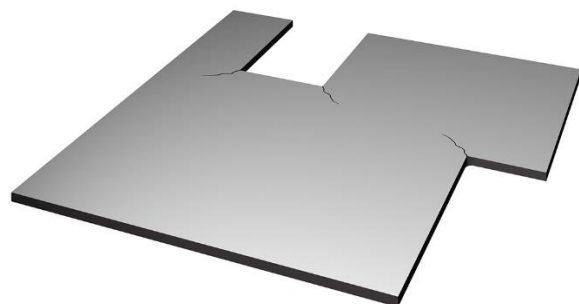


图 8: 较小半径的转角
Figure 8: Corners with a smaller radius

3.2 转角连接 Corner joints

复合防火板元件之间的高强度连接是通过胶黏剂和紧固件、弹簧导轨 (例如由复合防火板制成) 或榫槽的组合来实现的。请注意, 复合防火板元件只能在相同的生产方向上相互连接。下图 9 到 14 图解了创建复合防火板坚固接头的一些可能性选项。

Higher strength joints between compact laminate elements are achieved with the combination of gluing and fasteners, spring guides (e.g. made of compact laminate) or grooves. Note that compact laminate elements may only be joined to each other in the same production direction. Figures 9 to 14 below illustrate some possibilities for creating sturdy compact laminate joints.



图 9: 榫槽
Figure 9: Grooved



图 10: 榫槽/槽口衔接
Figure 10: Grooved/rebated



图 11: 榫头和榫槽
Figure 11: Tongue and groove



图 12: 角弹片
Figure 12: Angle spring

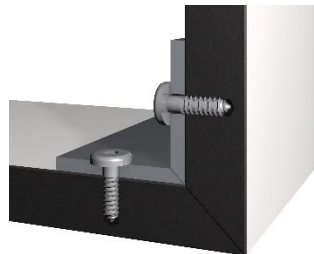


图 13: 金属垫片, 螺丝固定
Figure 13: Metal profile, screw-fixed

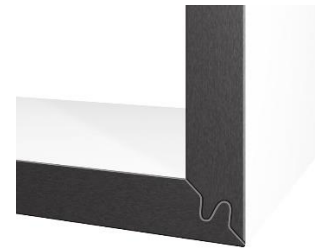


图 14: 铣削槽连接
Figure 14: Profiled connections

3.3 粘合 Bonding

当将两个复合防火板结合在一起时，重要的是要确保尺寸移动不被阻碍。为了避免应力，只有充分养生处理后的复合防火板才能粘接在一起且总是在同一个机器加工方向上。在涂胶之前，板表面必须无灰尘、油脂和污垢，必要时还要进行预处理。建议自己多做一些尝试。请遵守胶水厂家的加工指南。**根据不同的应用类型，在粘接过程中必须遵守以下说明：**

When gluing two compact laminate elements, it is important to ensure that dimensional changes are not obstructed. To avoid stress, only adequately conditioned compact laminates should be bonded together and always only in the same machine direction. Prior to bonding, the boards have to be free of dust, grease and dirt, and pre-treated as necessary. Own attempts are recommended. Please observe the processing guidelines of the adhesive manufacturer. **Depending on the type of application, the following instructions must be observed during bonding:**

3.3.1 家具构造部件间的粘合 Bonding in furniture construction

双层叠加和对接粘合

Doubling and butt joint bonding

视觉上的厚板可以通过叠板或立柱生产。当采用叠板时，在边缘区域粘接相应的复合防火板板条。

Visually thicker boards can be produced by doubling or upstands. When doubling, corresponding compact laminate strips are glued on in the edge area.

对接粘合，如连接两个防火板台面板时的情况，例如，用作弹簧导轨 / 薄片的额外支撑。要了解更多信息，请参见 4.7 台面板接头和转角接头。这里必须保证复合防火板部件的运动方向一致。例如，Otto 化学产品公司生产的张力平衡单组分 1K Ottocoll M500 粘合剂就是

一种合适的产品。

Bonding of butt joints, as is the case when joining two compact worktops, for example, is used as additional support to spring guides / lamellas. For more information, see section 4.7 Worktop joints and corner joints. The same running direction of the compact laminate parts must be ensured here. The tension-equalising single-component 1K Ottocoll M500 adhesive by Otto Chemie is, for example, a suitable product.

胶黏剂类型推荐

Adhesive recommendations:

OTTO CHEMIE
Ottocoll M500
Ottocoll M560

INNOTEK
Adheseal Project
Powerbond XS 330 15

JOWAT
Jowat 690.00

SIKA
SikaTack* Panel



图 15: 叠加板
Figure 15: Doubling

竖立连接 / 斜面接头

Upstand / mitre joint

对于厚度达 100 毫米的复合防火板, 或者如果出于美观原因, 花色必须在边缘可见, 则竖立连接 (图 16) 是一个可能的解决方案。首先, 要将连接在一起的两个部件呈 45° 斜接。然后把部件放在水平面上, 面朝下, 使斜接的尖端接触。然后在这个对接处施加胶带。For thicknesses up to 100 mm or if the decor has to be visible on the edge for visual reasons, the upstand (Figure 16) is a possible solution. First, the two components to be connected together are mitred at 45°. Then the work piece is placed on a level surface, face side down, so that the tips of the mitres are touching. Adhesive tape is then applied to this butt joint.

确保部件在相同的方向进行移动非常重要。两个部件都要细心翻转。然后涂上胶水 (图 17), 然后将较短的部件或竖立件向上翻转 (图 18)。在胶水凝固前, 竖立件或斜结件必须用胶带固定在正确的位置。Ottocoll P 85 是一种可选的合适胶水。

It is also important to ensure that the parts run in the same direction. Then both work pieces have to be turned over with corresponding caution. Then the glue is applied (Figure 17) and then the shorter work piece or upstand is flipped up (Figure 18). Until the glue has set, the upstand or the mitre joint has to be secured in the correct position with adhesive tape. Ottocoll P 85 is an example of a possible adhesive.

胶黏剂类型推荐

Adhesive recommendations:

OTTO CHEMIE
Ottocoll P85
Ottocoll P86 16 17 18

WÜRTH
PUR Rapid

INNOTEK
Repaplast Repair
Timber Fix 30





图 16: 复合防火板的竖立连接
Figure 16: Upstand of a compact laminate

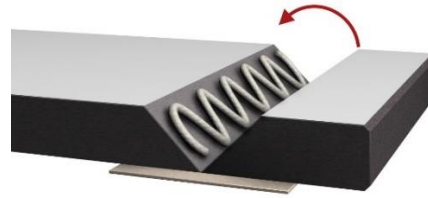


图 17: 在斜结处施加胶黏剂并折叠
Figure 17: Apply adhesive in the mitre and fold together



图 18: 折叠竖立件并用胶带固定
Figure 18: Fold up the upstand and secure with adhesive tape

3.3.2 室内设计应用中的粘合 Bonding interior design

在护墙板区域的复合防火板的粘接必须使用专门为此目的开发的永久弹性胶黏剂系统。复合防火板可以作为墙板粘贴到实木，复合板或金属结构材料上。必须确保一定的胶黏剂厚度，以便能够弹性地吸收板的任何运动。为了将复合防火板无形地粘到下层结构上，我们推荐使用产自 MBE 的 Panel-loc 品牌胶黏剂。

Bonding of compact laminates in the area of wall cladding must be carried out with a permanently elastic adhesive system specially developed for this purpose. The compact laminate can be bonded as wall cladding to solid wood, multiplex or metallic substructure materials. The specified adhesive thickness must be ensured in order to be able to elastically absorb any movements of the board. In order to invisibly glue compact laminate onto the substructure, we recommend Panel-loc from MBE, for example.

胶黏剂类型推荐

Adhesive recommendations:

OTTO CHEMIE	JOWAT	INNOTEC	MBE	SIKA	PRO PART	DKS Technik
Ottocoll M500 Ottocoll M560	Jowat 690.00	Adheseal Project Powerbond XS 330	Panel-loc	SikaTack* Panel		

3.3.3 表面粘合 Surface bonding

大尺寸的表面胶合只有在特殊情况下才可能。受应力影响的接头，例如由于振动、冲击或类似的，应该用机械连接元件进行加固。Surface gluing of large dimensions is only possible in exceptional cases. Joints that are subject to major stress, for example due to vibrations, impacts or similar, should be reinforced with mechanical connecting elements.

由于材料不能吸收水分并形成气体，不建议将爱格复合防火板与底面材料进行整面粘合。

Due to the material's inability to absorb moisture or emerging gases, full-surface bonding of EGGER compact laminates with laminate is not recommended.



3.4 上钉 Screwing

在复合防火板中可直接使用攻丝螺钉。使用自攻螺钉也没有问题。推荐使用慢螺纹的螺钉，因为它们具有更好的握螺钉力。在任何情况下，预钻孔都是重要的。对于较高拉伸载荷的板材，推荐使用内六角螺钉，如：针对 6mm 薄型复合防火板的产自 RAMPA 的 ES 型或 E 型内六角螺钉。这也能够促使一个更高的预组装度且更易拆卸。螺钉必须穿透到至少 25mm 的深度，钻孔的直径必须正确选择，以防劈裂。Cutting screw threads in compact laminate is straightforward. Self-tapping screws can also be used without a problem. Screws with a slow thread are recommended as they achieve a better pull-out resistance. Pre-drilling is essential in all cases. For high tensile loads, it is recommended to use a screw-in socket, e.g. RAMPA type ES or RAMPA type E for thin compact laminates from 6 mm. This also enables a higher degree of prefabrication and easier disassembly. A minimum of 25 mm must be observed for screw joints parallel to the board level and the bore hole diameter must be selected so that the board does not crack.

通孔连接的表面螺钉必须有足够的间隙，以补偿温度和湿度波动造成的尺寸移动。钻孔的直径应比紧固件直径大 2 - 3mm，这样可以避免在天气变化时因胀缩运动而产生的张力。应避免使用埋头螺钉 (见图 19)。反而，应使用平头螺钉 (见图 20)。这些带有头部清漆的螺钉也可以从不同的制造商 (如 MBE) 那里获取。

Surface screw joints with through-holes must have sufficient clearance to compensate for the dimensional movement resulting from temperature and humidity fluctuations. The diameter of the drill hole should be 2 to 3 mm larger than the diameter of the fastening device. In this way, tension due to the dilation and shrinking movement during changing weather can be avoided. The use of countersunk screws (see Figure 19) is not recommended, as these prevent the expansion of the board. Instead, flat-head screws should be used (see Figure 20). These are also available from various manufacturers (e.g. MBE) with head varnish.



图 19: 不正确
Figure 19: Incorrect



图 20: 正确
Figure 20: Correct

注意

ATTENTION:

- 使螺丝孔直径比螺丝杆直径大 2-3 mm
Make the diameter of the hole 2 to 3 mm larger than the diameter of the screw shank
- 避免使用埋头螺钉
Avoid using countersunk screws
- 要有浮点和定点
Formation of sliding and fixed points

无论何种应用，定点和浮点的设计都适合应用于垂直方向和水平方向上。见以下信息。

The design of fixed and sliding points is valid for vertical and horizontal designs regardless of the application, see next page.

3.4.1 定点 Fixed points

定点的作用是均匀分布膨胀运动，并应尽可能位于中心位置。钻孔直径等于紧固件的直径。

The fixed point serves to evenly distribute the expansion play and should be positioned as centrally as possible. The bore hole diameter is equal to the diameter of the fastener.

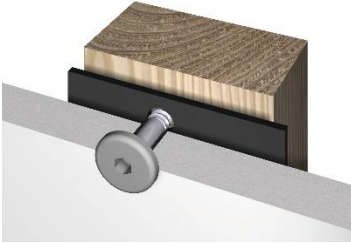


图21: 复合防火板的不正确固定方式
Figure 21: Incorrect fixation of a compact laminate

3.4.2 浮动点 Floating points

浮动钻孔直径应比紧固件大 2 - 3mm (见图 22)。钻孔要用螺丝头盖住。必要时应使用垫圈。在图中, EPDM (三元乙丙橡胶) 密封带应用于木制结构件来防潮。EPDM 代表乙丙二烯单体。这是一种合成橡胶。EPDM 非常耐紫外线、臭氧和其他大气影响。
The bore hole diameter of the floating points should be 2 to 3 mm larger than the fastener (see Figure 22). The bore hole should be covered by the head of the screw. Washers should be used when necessary. In the figures, an EPDM sealing band has been applied to the wooden substructure for protection against moisture. EPDM stands for ethylene propylene diene monomer. This is a synthetic rubber. EPDM is very resistant to UV, ozone and other atmospheric influences.

根据固定点到板边的最大距离确定所需的伸缩间隙。长度每增加 1m, 浮动钻孔的直径就要增加 2 毫米。在任何情况下, 螺丝钉都要处于转孔的中心。如有必要, 可通过使用合适的钻具来确保这一点。对于室内应用, 可采用表中所列的固定距离:
The required expansion play is established based on the largest distance of the fixed point to the board edge. The floating point drill hole diameter must be increased by 2 mm for every metre of length. In any case, the screw must be positioned exactly in the centre of the drill hole. If necessary, this can be ensured by using suitable drilling jigs. For interior applications, the fastening distances listed in the table can be used.

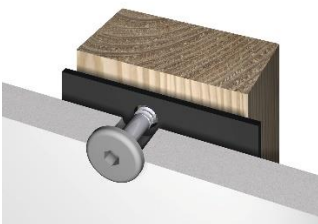


图22: 复合防火板正确的固定方式
Figure 22: Correct fixation of a compact laminate

板厚 Board thickness [mm]	最大间距值 Maximum fastener spacing	
	a [mm]	b [mm]
8	790	500
10	920	670
12	960	900
13	970	920

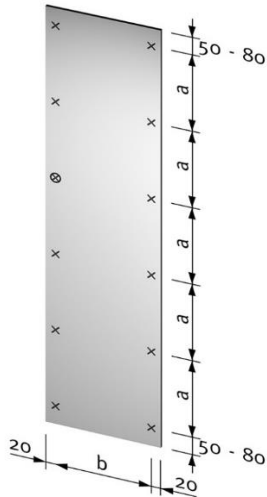


图 23
Figure 23

⊗ = 定点 Fixed point
x = 浮动点 Floating point

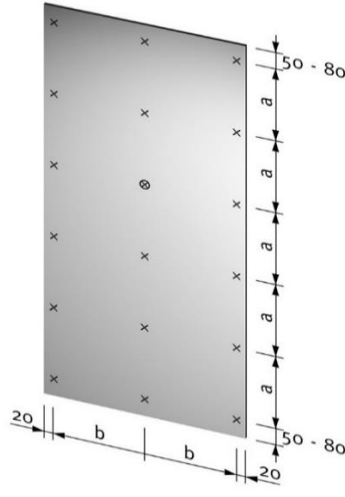


图 24
Figure 24

⊗ = 定点 Fixed point
x = 浮动点 Floating point

4. 应用 Applications

4.1 护墙板 Wall cladding

由于其日常使用中的坚固性和适用性，爱格复合防火板特别适合于室内墙板的应用。我们建议此种应用的板厚最小为 8 毫米。在应用作为墙板之前，墙壁和底层结构应完全干燥。应确保墙板背面足够的空气流通且板能充分适应当前的环境。材料不应暴露在滞留的水分中。所有要连接在一起的板材必须遵循相同的生产方向。

Thanks to its robustness and suitability for everyday use, EGGER compact laminate is particularly well suited for use as interior wall cladding. We recommend a minimum board thickness of 8 mm for such applications. The substrate should be completely dry before applying the cladding. Always ensure sufficient rear ventilation or acclimatisation of the boards. The material should not be exposed to trapped moisture. All parts to be joined together must follow the same production direction.

4.1.1 底层结构和背面通风 Substructure and rear ventilation

复合防火板应固定在坚固、耐腐蚀和紧固连接的底层结构上，以安全地支撑墙板的重量并确保墙板后时刻通风。在干式施工应用中，底层结构的附件和复合防火板必须固定到木钉框架上。

Compact laminate must be attached to a stable, corrosion-resistant and force-fit substructure that securely supports the weight of the wall cladding and ensures ventilation behind the elements. In dry construction applications, the attachment of the substructure and the compact laminate must be anchored to the stud framing.

紧固件的选择必须根据底层结构和墙板的重量进行调整。元件前后不同的环境条件会导致翘曲。因此，复合防火板墙板的安装必须始终为板后部提供足够的通风，从而使温度和湿度平衡。通风装置必须朝向房间一侧。

The selection of the fasteners has to be tailored to the substructure and the weight of the wall cladding. Different climate conditions in front of and behind the elements can lead to warpage. It is therefore essential that compact laminate wall cladding installations always make provision for adequate ventilation to the rear of the panels, which allows temperature and humidity to equalise. Ventilation must be towards the room side.

如果无背面通风或背面通风间隙小于 2cm，墙体或灰泥等吸水性矿物基材必须通过防水涂料、弹性阻隔面料进行预处理。可以在第19页的“直接安装”中找到适合的系统。

If there is no rear ventilation or a rear ventilation gap smaller than 2 cm, absorbent mineral substrates such as walls or the plaster must be pre-treated with waterproof, elastic barriers. Possible systems for this can be found under "Direct installation" on p. 19.

这些隔层通常是被上漆的，可以防止水渗透到砖石中，在潮湿的房间中应用该过程是必不可少的。有关在潮湿条件下使用复合防火板的更多信息，请参阅第 20 页“卫生间和淋浴房”。

These barriers are generally painted on and prevent the penetration of water into the masonry, which is essential for an application in a humid room. For more information on the use of compact laminates in humid conditions, see p. 20 under "Sanitary and shower enclosures".

垂直框架通常允许空气流通。当底层结构水平布置时，应采用适当的结构确保提供足够的通风。底层结构应尽量垂直以使整个面板表面无应力。合适的底层结构包括垂直的木条，铝架或复合防火板。

Vertical battens generally permit air circulation. Where substructures are arranged horizontally, an appropriate construction must ensure that adequate ventilation is provided. The substructure should be vertically plumb to allow tension-free mounting of the entire panel surface. Suitable substructures include vertical strips of wood, aluminium or compact laminate.

板条和 / 或底层结构的最大间距取决于所选的复合防火板厚度。重要的是要确保进风口和出风口畅通无阻，以免空气流通受到阻碍。还要确保底部结构板表面的含水率与装饰墙板的含水率没有显著差异。

The maximum spacing of the battens and/or substructure depends on the chosen compact laminate thickness. It is important to ensure that air inlet and outlet areas remain unobstructed so that air circulation is not impeded. Also ensure that the moisture of the surface to be panelled does not differ significantly from the moisture of the finished wall panel.

以下是有区别的：

The following are differentiated:

- 可见的机械固定安装 visible mechanical fastening
- 无形机械固定安装 concealed mechanical fastening
- 无形胶固定安装 concealed glued fastening

注意

ATTENTION

- 复合防火板的安装其尺寸运动必须始终不受约束
The installation of compact laminates must always be free of constraints
- 至关重要的是，要能够在复合防火板正面和背面创造一个水分平衡的环境
It is imperative that compact laminates are able to create a balance moisture on the front and back

4.1.2 可视机械固定 Visible mechanical fastening

固定是通过螺钉或铆钉在底层结构上完成的。必须充分考虑足够的膨胀间隙和浮点和定点的正确定位。当使用木材作为基层结构时，必须使用EPDM（三元乙丙橡胶）带进行解耦。当使用木材作为基材时，必须使用 EPDM 胶带进行解耦。EPDM 代表乙丙二烯单体。这是一种合成橡胶。EPDM 非常耐紫外线、臭氧和其他大气影响。紧固件顶部涂漆可与装饰面相搭配。在浮点处，铆钉必须通过一个附件进行固定且该附件允许在铆钉处有 0.2mm 的间隙。

Fixation is done via screws or rivets on the substructure. A sufficient expansion play and the right positioning of floating and fixed points must be taken into account. An EPDM tape must be used for decoupling when using wood as substructure. EPDM

stands for ethylene propylene diene monomer. This is a synthetic rubber. EPDM is very resistant to UV, ozone and other atmospheric influences. The fasteners are available with head varnish to match the decors. The rivets must be fitted with an attachment that allows approx. 0.2 mm play in the rivet at the sliding points.

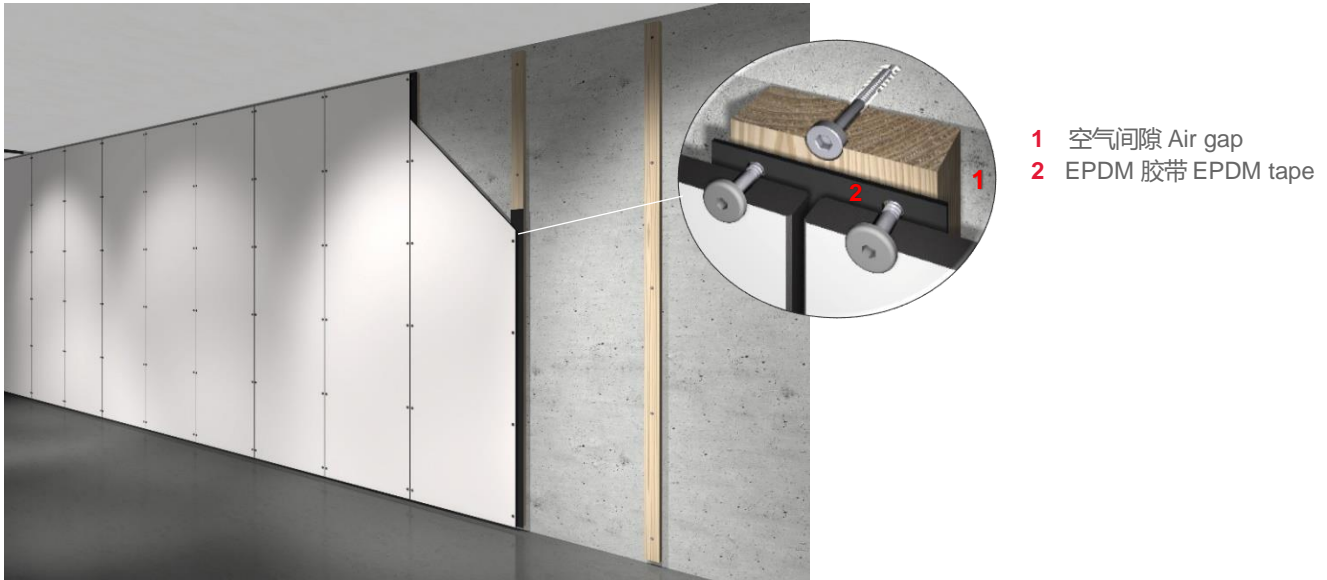


图25: 可视机械固定
Figure 25: Visible mechanical fastening

4.1.3 隐形机械固定 Concealed mechanical fastening

通过悬浮式隐形固定的复合防火板可以直接拆卸，比可见的固定方法更美观。拆卸这些板子既快捷又简单。很容易在安装部件后面安装电缆和管道。根据所选择的固定系统，另一个优点是元件可以在以后进行调整。可实现部件的无应力安装。

The concealed fastening of compact laminate by hanging permits straightforward disassembly and appears more visually appealing in comparison to visible fastening methods. Removing the boards is quick and simple. Cables and pipework installed behind the elements are easy to reach. Depending on the chosen fastening system, another advantage is that the elements can be adjusted later on. Tension-free mounting of the elements is also possible.

对于所有涉及悬挂的安装方法，必须留有足够的空间来升高和降低部件。这个间距或“悬挂间隙”将作为阴影空白部分保持可见。For all fastening methods that involve hanging, sufficient space must be allowed to raise and lower the elements. This air space or "hanging space" remains visible as a shadow gap.

通过扣条悬挂安装

Hanging by means of profile strips

对于这种安装方法，在水平底层结构中切割槽以扣住附着在墙板上的缩缘导轨。为了便于安装，缩缘导轨上的榫舌应比槽薄。复合防火板元件上的缩缘导轨不应超过槽元件的整个宽度，缩缘导轨应是间歇性的，以允许垂直方向空气流通。可以使用现成的胶合板或金属Z型型材制成的缩缘导轨。如果薄型复合防火板元件不能通过螺钉实现安全安装连接，也可以额外施胶固定。

For this fastening method, a groove is cut into the horizontal substructure to hold the rebate rail attached to the wall element. For ease of fitting, the tongue of the rebated rail should be thinner than the groove. The rebated rails on the compact laminate elements should not extend across the full width of the elements, they should be intermittent in order to permit vertical air circulation. Rebate rails made of plywood or metal Z-profiles can be readily used. If a secure screw joint cannot be achieved with thin compact laminate elements, additional gluing is also possible.

通过金属五金件安装

Hanging by means of metal hardware

还可以使用金属五金件系统来安装墙板部件(见图 26)。选择的系统必须根据制造商的建议来使用, 以确保安全安装。
Systems with metal hardware are also offered for mounting wall elements (see Figure 26). The chosen system must be used according to the manufacturer's recommendations to ensure secure installation.



图26: 复合防火板隐形固定安装
Figure 26: Concealed fastening of compact laminates

4.1.4 隐形施胶安装 Concealed glued fastening

复合防火板也可以通过使用专门开发的永久弹性粘合剂系统将板粘贴到坚固的底层结构上。当使用木板作为底层结构时, 有必要使用底涂剂作为第一步, 以确保牢固的附着力和隔离潮气。

Compact laminate can also be mounted by gluing it to a force-fit substructure using permanently elastic adhesive systems developed especially for the purpose. When using wood as a substructure, it is necessary to apply a primer as a preliminary step in order to ensure secure adhesion and moisture decoupling.

该系统包括胶水、安装胶带以及对应的用于涂胶前对表面进行底涂剂处理的产品。安装胶带用于初步固定。永久固定是用胶水完成的。设置定义的距离是安装胶带的另一个功能。这确保了所需的胶水厚度, 以能够动态地吸收任何板的运动。遵守胶水厂家的加工说明。
The systems consist of the glue, an installation band and the corresponding products for priming the surfaces prior to gluing. The mounting tape is intended for the first fixation. The permanent fixation is done with the glue. Setting the defined distance is another function of the mounting tape. This ensures the required glue thickness is achieved in order to be able to elastically absorb any movements of the board. Observe the processing instructions of the glue manufacturer.

4.1.5 详细的设计 Detailed designs

无论所选的底层结构和安装系统如何, 下列详细的设计方案在实践中是常见的并提供了持续且没有疑问的墙板安装方案。
Irrespective of the selected substructure and the mounting system, the following detailed designs are usual in practice and provide the continued and unproblematic mounting of wall cladding.

对接接头信息

Butt and joint formation

创建水平和垂直的接头或接缝(见图32 – 34)有许多方法。然而, 重要的是要确保部件有足够的膨胀间隙。

There are numerous possibilities for making joints or butt joints (see Figure 27 to 29). However, it is important to ensure that the elements have sufficient clearance for expansion.

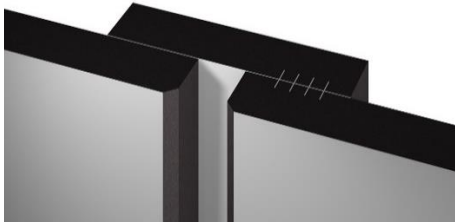


图27
Figure 27



图28
Figure 28



图29
Figure 29

顶部密封

Top closure

为了确保功能通风，墙板的上部封闭处必须与天花板保持一定距离，并用于内部通风。天花板和复合防火板之间的距离也提供了必要的膨胀间隙。为了保证通风的完整功能，到天花板的距离必须至少符合通风间隙的大小。

The top closure of the wall cladding must be at a distance from the ceiling to ensure functional ventilation and is used for internal ventilation. The distance between the ceiling and the compact laminate also provides the necessary expansion play. To ensure the full functionality of the ventilation, the distance to the ceiling must correspond at least to the size of the ventilation gap.

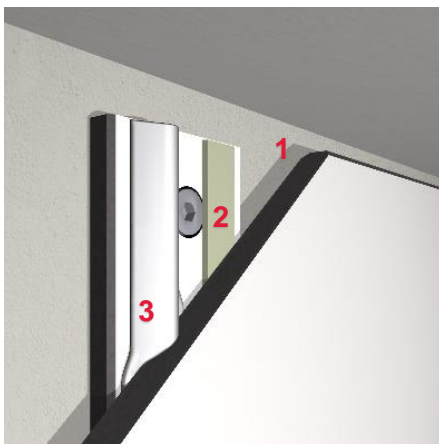


图30: 墙板的顶部密封
Figure 30: Top closure of the wall cladding

- 1 通风间隙 Air gap
- 2 安装胶带 Mounting tape
- 3 胶 Glue

底部封闭

Bottom closure

复合防火板墙板的底部封闭可以通过两种方式实现。

The bottom closure of wall cladding with compact laminate can be achieved in two ways.

离地面一定距离处的封闭通常与复合防火板的封闭功能相同。复合防火板和地面之间的距离为复合防火板背面提供了充足的空气流通并可防止水分在墙板后面滞留。但必须遵守离地面的最小距离为 50 毫米的准则。安装的底座应尽可能薄，以便留有足够大的通风截面。

Closure at a distance from the floor generally functions in the same way as the closure of the compact laminate. The distance between the compact laminate and the floor provides sufficient air circulation behind the compact laminate and prevents moisture from stalling behind the wall cladding. But a minimum distance of 50 mm to the floor must be observed. Installed bases should be as thin as possible, so that a sufficiently large ventilation cross-section remains available.





- 1 通风间隙 Air gap
- 2 瓷砖基底 Tile base
- 3 硅胶接缝 Silicone joint
- 4 离地面最小距离 Minimum distance to floor 50 mm

图 31: 墙板底面密封
Figure 31: Bottom closure of the wall cladding

与地板齐平的安装，主要用于淋浴区域的复合防火板，要求复合防火板不能直接贴在地板上，因为板会膨胀和收缩。一种所谓的压缩型绑带在安装过程中可保持必要的距离，确保之后的板的伸缩间隙。

A flush floor installation, used primarily for compact laminate in shower areas, requires the compact laminate to not be directly on the floor, as the board will expand and shrink. Compression tape maintains the necessary distance during installation, ensuring the later expansion play of the board.

复合防火板和地面之间的缝隙可以最终使用硅胶密封，以防止水分进入。为了提高硅胶附着力，复合防火板底部应开倒角。在底部封闭的情况下实现空气循环，通风间隙尽可能更大。

The gap between the compact laminate and floor can subsequently be sealed with a silicone joint in order to prevent moisture from entering. To improve the silicone adhesion, the edge of the compact laminate should be bevelled. To achieve air circulation in the case of a bottom closure, the ventilation gap must be as large as possible.



- 1 压缩胶带 Compression tape (密封胶带 sealing tape)
- 2 硅胶接缝 Silicone joint

图 32: 淋浴区域安装
Figure 32: Flush floor installation for shower area

转角解决方案

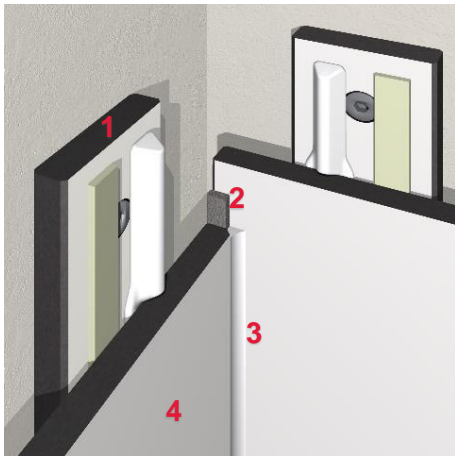
Corner solution

对于湿区复合防火板的转角解决方案，复合防火板与墙体之间的距离也必须至少等于底层结构的厚度。两个复合防火板之间的转角连接必须足够大，以便由于气候变化而引起的尺寸变化能够得到平衡。如果转角处连接需要密封，例如在淋浴间使用时，这也是在压缩绑带的帮助下完成的，以便提供膨胀间隙。复合防火板之间的间隙通过额外的密封硅连接来防止水分的进入(图 33)。这里，同样需要



通过斜倒角完成边缘密封。

In the case of corner solutions in humid conditions with compact laminate, a distance between the compact laminate and the wall equal to at least the thickness of the substructure must also be in place. The corner connection between the two compact laminates must be sufficiently large so that size changes due to climate modifications can be balanced out. If the corner connection needs to be sealed, for example when used in shower spaces, this is again done with the help of compression tape, in order to provide the expansion play. The gap between the individual compact laminates is protected from incoming moisture with an additional sealing silicon joint (Figure 33). Here, too, it is advisable to finish the edge with a bevel.



- 1 复合防火板型条 Compact laminate strip
- 2 压缩胶带 Compression tape (密封胶带 sealing tape)
- 3 硅胶接缝 Silicone joint
- 4 复合防火板 Compact laminate

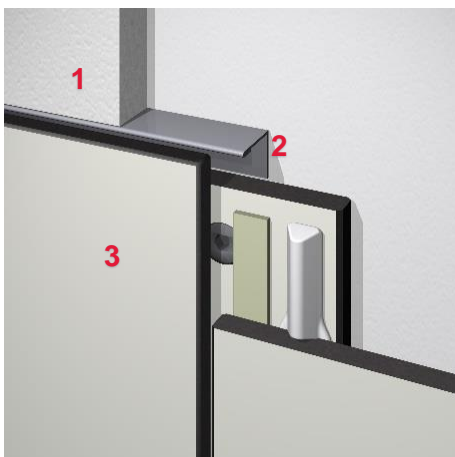
图 33: 湿区转角解决方案
Figure 33: Corner solution in humid area

表面接缝

Surface butt

医院通常用的防坠落解决方案包括使用复合防火板作为半高墙板。为此，从复合防火板到石膏板的无缝过渡是必需的。为了保证复合防火板的功能性通风，可以使用不锈钢角支架作为视觉上的闭合(图 34)。

A usual crash protection solution for wall cladding in hospitals involves the use of compact laminate as half-height wall cladding. A seamless transition from the compact laminate to the drywall is necessary to this end. To ensure functional acclimatisation of the compact laminate, a stainless steel bracket can be used as a visual finish (Figure 34).



- 1 护墙用纤维石膏板 Wallpapered gypsum fibreboard
- 2 不锈钢支架 Stainless steel bracket
- 3 复合防火板 Compact laminate

图 34 平面安装
Figure 34 Flush installation

直接安装

Direct installation

对于部分墙板，复合防火板通常通过可见的螺钉直接固定在墙壁上。由于元件的背部没有通风，必须在复合防火板和墙壁之间安装防潮层。建议复合防火板的最大高度为 300 毫米。防潮层必须施加在墙体上。

For partial wall cladding, compact laminate boards are usually fixed directly to the wall by means of visible screw joints. As there is no ventilation to the rear of the elements, damp proofing must be installed between the compact laminate and the wall. A maximum height of the compact laminate of 300 mm is recommended. The damp proofing must be applied on the wall side.



- 1 复合防火板 Compact laminate
- 2 防潮层 Damp proofing

图 35: 直接安装

Figure 35: direct installation

适合的防潮方式

Possible damp proofing

液体涂层

Liquid coatings

- OTTO CHEMIE: OTTOFLEX 液体涂层
OTTO CHEMIE: OTTOFLEX liquid foil
- FERMACELL: Fermacell 液体涂层
FERMACELL: Fermacell liquid foil
- KNAUF: Knauf 表面密封剂
KNAUF: Knauf surface sealant

密封膜

Sealing membranes

- OTTO CHEMIE: OTTOFLEX 密封膜
OTTO CHEMIE: OTTOFLEX sealing membrane
- KNAUF: Knauf 密封和解耦膜
KNAUF: Knauf sealing and decoupling membrane

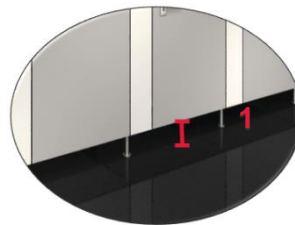
4.2 卫生间和淋浴室隔板 Sanitary and shower partitions

当在卫生设施中使用复合防火板时，在设计和安装期间确保复合防火板不受积水影响，并确保房间有足够的通风。必须只使用无腐蚀性的建筑材料和固定装置。在高湿度地区的应用需要对转角连接处进行机械加固，例如使用木钉或夹子，并使用固定后防水的粘合剂系统。对于磨损程度高的商业应用，地面和板的下边缘之间必须保持至少 120 毫米的距离。

When compact laminate is used in sanitary facilities, it is important to ensure during design and installation that the compact laminate is not subject to standing water and that there is sufficient ventilation of the room. It is imperative to use only corrosion-free construction materials and fastening devices. Application in areas with high humidity requires the mechanical reinforcement of corner connections, for example using dowels or clips, and the use of an adhesive system that is waterproof after setting. For commercial applications subjected to increased wear and tear, a minimum distance of 120 mm must be maintained between the floor and lower edge of the board.



图 36
Figure 36



1 间距 Spacing 120 mm

在房间内提供足够的通风，并确保复合防火板在淋浴房使用后能够进行干燥是很重要的。

Providing adequate ventilation in the rooms and ensuring that the compact laminate can dry after the shower stall is used is important.

具有吸潮性能的矿物板次层，如墙壁和/或石膏板上必须刷上一层防水弹性阻隔面料。该防水层通常是用于防止水穿透底层结构。德国建筑联合会提供了这种密封防潮产品的小册子（“用瓷砖和木板安装的防水层”）。

Absorbent mineral substructures such as walls and/or plaster have to be primed with a waterproof elastic barrier. This barrier is generally brushed on and prevents water from penetrating the substructure. The German Construction Confederation offers a leaflet for such sealing and barrier products ("Waterproofing barriers for installations with tiles and boards").

本手册描述了在充分考虑板材潮湿暴露等级和底层结构的情况下，使用液体状态下的密封复合物对室内、室外瓷砖和木板进行处理加工。考虑到定义的湿度暴露等级和底层结构。可以在第 19 页中“直接安装”条款中找到对应的密封系统。材料的潮湿暴露等级必须与制造商或供应商协调。必须遵守相关制造商的加工说明。

This leaflet describes sealing compounds processed in the liquid state with tiles and boards for interior and exterior applications, taking into account defined moisture exposure classes and substructures. You will find corresponding sealing systems on p. 19 under "Direct installation". The moisture exposure classes of the materials have to be coordinated with the manufacturers or suppliers. Compliance with the processing instructions of the relevant manufacturers is mandatory.

注意
ATTENTION

- 密封淋浴房墙体包覆层基材
Sealing the substrate for shower cladding
- 始终使用纵向切割的部件作为舱门
Always use elements for cabin doors as longitudinal cuts
- 复合防火板不能暴露在积水中
Compact laminates may not be exposed to trapped moisture
- 在复合防火板正面和背面保持水分平衡很重要
It is imperative that compact laminates are able to create a balance moisture on the front and back



图 37: 卫生间区域应用案例
Figure 37: Application example sanitary area © andreaswimmer.com

4.3 Furniture doors

门的宽度不能大于高度。由于长度方向的尺寸变化只有横向的一半，因此建议在复合防火板的长度方向切割门扇。门的正面和反面之间温度或相对湿度的过大差异会导致复合防火板翘曲。这就是为什么必须保证足够的空气流通，例如在安装厕所隔间或更衣室时。门的宽度、高度和重量是决定铰链数量的因素。其他因素，如安装位置或是否会从外套挂钩的附物上产生额外的应力，必须考虑到可能会视情况而不同。

Doors should not be wider than they are high. Since format changes are only half as large in the lengthwise direction compared to the crosswise direction, cutting door leaves in the lengthwise direction of the compact laminate is recommended. Excessive differences in temperature or relative humidity between the front and reverse sides of the door can cause the compact laminate to warp. This is why sufficient air circulation must be ensured, for example when installing toilet cubicles or changing rooms. The door width, height and weight are deciding factors for the number of hinges required. Other factors, such as the installation location or whether additional stress is to be expected from the attachment of coat hooks, for example, can vary greatly from case to case and must be taken into account.

因此，所提供的信息（见图 38）仅可作为厚度为 13 毫米、宽度为 600 毫米的门安装指南。建议进行试装。对于重载荷型应用，可以在距上铰链下方最大 100 毫米处安装一个额外的铰链。上下铰链的安装位置应至少保持距板的外缘 100 毫米的距离。例如，Häfele, Blum (Expando T) 或 Prämeta (系列 3000) 公司可提供合适的铰链，（见图 39）

The information provided (see Figure 38) should therefore be regarded as a guideline only for a door of 13 mm thickness and a width of up to 600 mm. Performing a trial mounting is recommended. For heavy duty applications, an additional hinge can be

fitted at max. 100 mm below the upper hinge. The upper and lower hinges should be located at a minimum distance of 100 mm max., measured from the outer edge of the panel. Suitable hinges are offered, for example, by Häfele, Blum (Expando T) or Prämeta (Series 3000) (see Figure 39).

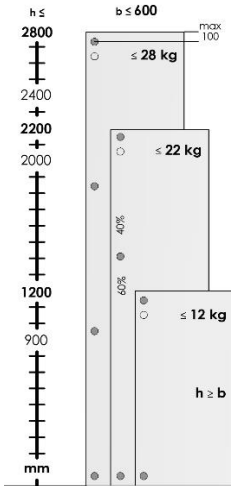


图 38: 13mm 厚门板安装指导值
Figure 38: Guide values for a 13 mm thick door



图 39 铰链
Figure 39: Hinge
Images: © Prämeta

4.4 桌面 Tabletops

复合防火板非常适合如在办公家具、桌子、课桌和会议室桌面应用。板的厚度，安装距离和在基础框架上的突出部分必须根据预期的负载来布置。桌面必须有 10 毫米的最小厚度，以便有足够的材料用于安全螺钉的连接。和底层结构的连接紧固可以通过 ([几种 ([方式进行。保证无应力的装配是很重要的。螺丝可以直接打入板内，也可以使用螺丝套筒。底层结构中的紧固点必须留有足够的伸缩间隙。钻孔的直径应比固定件的直径大 2 - 3mm。

Compact laminate is very well suited for applications as tabletops, for example on office furniture, desks, school tables, conference room tables and work tables. The board thickness, mounting distances and projection over the base frame have to be laid out depending on the expected loads. Tabletops must have a minimum thickness of 10 mm so that sufficient material is available for secure screw connection. Fastening to the substructure can occur in several ways. It is important to guarantee a tension-free assembly. Screws can be driven directly into the board or a screw-in sleeve may be used. The fixing points in the substructure must be implemented with sufficient expansion play. The diameter of the drill hole should be 2 to 3 mm larger than the diameter of the fastening device.



图 40: 防火板桌面板的推荐固定方式
Figure 40: Recommended fastening of the compact tabletop

板厚 Board thickness [mm]	突出部分 Projection [mm]	安装间距 Mounting distance [mm]
10	最大 max. 100	310
12	最大 max. 150	390
13	最大 max. 200	440

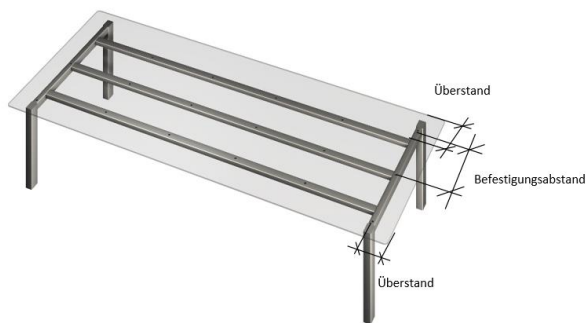


图 41: 间隙应用距离

Figure 41: Application example with gaps

4.5 复合防火板台面板的安装 Installation of compact worktops

由于其防潮性和坚固性，复合防火板台面板经常被用作厨房的台面板或洗盘洗台。

Compact worktops are very often used as worktops in kitchens or for washstands due to their moisture resistance and robustness.

但是，在加工和构造复合防火板时，必须从一开始就考虑到样式的变化。环境变化会导致台面板收缩或膨胀。就复合防火板而言，板在纵向上的变化大约是横向方向的一半。一般来说，应提供2mm /m 的伸缩缝。更多资料见第 4 页下的“3. 加工”。

When processing and constructing compact worktops, however, format changes must be taken into account from the outset. Ambient changes cause the worktop to shrink or expand. In the case of compact worktops, the change in format is about half as great in the longitudinal direction as it is large in the transverse direction. As a rule, an expansion play of 2 mm/m should be provided. Further information is available on p. 4 under "3. Processing."

4.6 水槽台和灶台安装 Fitting sinks and hobs

灶台或水槽台的切口必须根据测量和定位细节和/或使用制造商提供的模板生产。根据安装说明使用制造商提供的封闭式或集成式的干式密封—见图 42。

Cut-outs for hobs or sinks must be produced according to the measurements and positioning details and/or using templates supplied by the manufacturer. Enclosed or integrated dry seals of the manufacturer are to be used according to the installation instructions – see Figure 42.

在复合防火板台面板上进行切口时，必须遵守 3.1 “切口” 中的信息，以避免开裂。

When making cut-outs in the compact worktop, the information in 3.1 "Cut-outs" must be observed to avoid cracking.

切口边缘必须小心保护，以防湿气渗入基材。复合防火板台面板具有均匀一致和防潮的结构，这使得接缝密封不是绝对需要。然而，密封可以防止水分渗入基材。

The cut-out edges must be carefully protected against moisture penetrating into the body. It is true that the compact worktop

has a homogeneous and moisture-resistant board structure, which makes joint sealing not absolutely necessary. However, the latter prevents moisture from penetrating into the body.

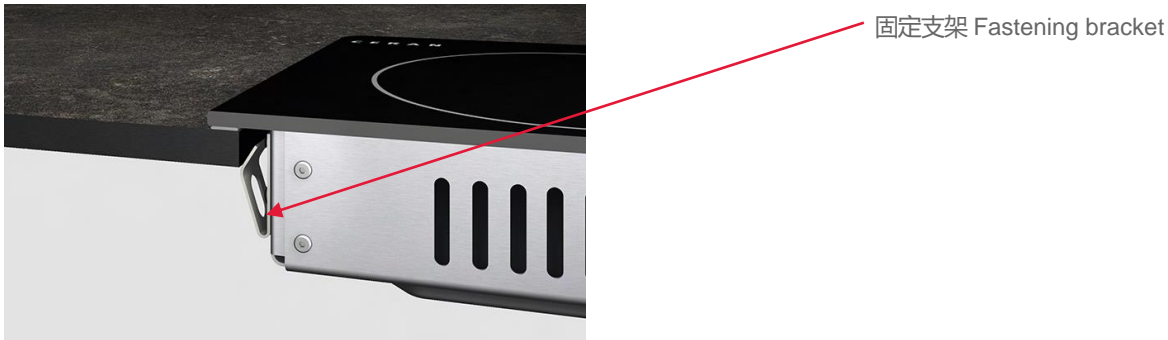


图 42: 密封和固定支架
Figure 42: Sealing and fastening bracket

确保正确的中心点和保留距切割边缘足够的安全距离，特别是灶台。按照制造商的说明操作。出于安全考虑，灶台不应该直接靠在切割边缘上，因为在某些操作条件下，温度可能上升到150°C。其他安装选项是齐平安装或下沉式结构安装方案。
Ensure correct centring and an adequate safety margin to the cut edge, particularly for hobs. Follow the manufacturer's instructions. For safety reasons the hob should not rest against the cut edge since, under certain operating conditions, temperatures could rise to 150 °C. Other installation options are flush installation or the substructure solution.



图 43: 齐平安装
Figure 43: Flush installation

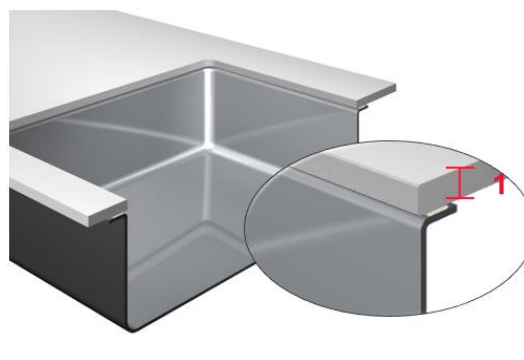


图 44: 下沉式安装
Figure 44: Substructure installation

当安装水槽时，需要为复合防火板台面提供特殊的解决方案。为此，提供爱格紧固件组合，确保易于安装 - 参见图 45。与复合防火板台面连接，紧固条粘在边缘上-见图 46。有关详细信息，请参阅技术数据表“爱格水槽安装套件”。

When mounting sinks, a special solution is required for the compact worktop. For this purpose, the EGGER fastening set is offered, which ensures easy installation – see Figure 45. In connection with compact worktops, the fastening strips are glued on edge – see Figure 46. For detailed information, please refer to the technical data sheet "EGGER sink installation kit".

为了粘接安装套件，应使用张力平衡胶黏剂系统，如奥托化学公司的 Ottocoll M500。更多胶黏剂建议说明见第 7 页“3.3. 粘合”部分。
For bonding the installation kit, a tension-equalising adhesive system such as the Ottocoll M500 from Otto Chemie should be used. Further adhesive recommendations can be found in section "3.3. Bonding" on p. 6.

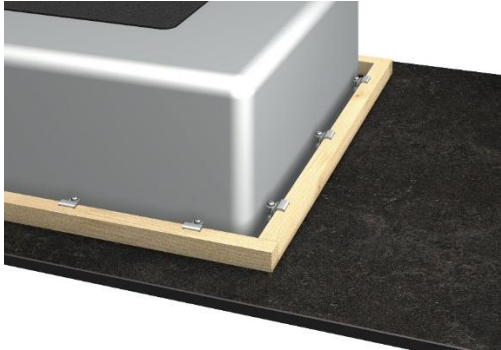


图 45: 采用爱格安装套件进行安装
Figure 45: Installation with the EGGER installation kit

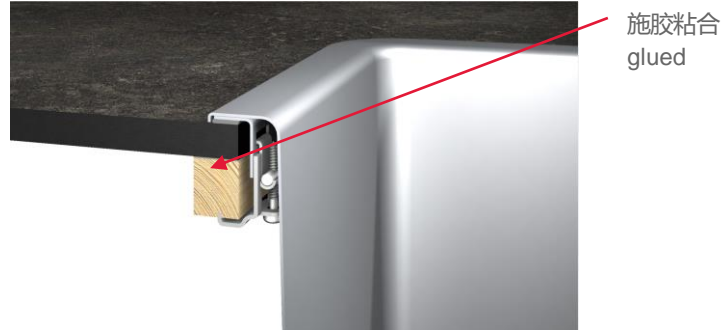


图 46: 边部粘合踢脚线板
Figure 46: Skirting glued on edge

剩余的台面板台架在任何一个地方的宽度不应小于50mm。出于人体工程学的考虑，灶台与直立柜体之间的距离不应小于 300mm。允许灶台制造商指定安全的安装余量。建议水槽和灶台之间保持相同的距离，参见图 47。

The remaining worktop rack should not be less than 50 mm wide at any one place. For ergonomic reasons, the distance between the hob area and an upright cupboard should not be less than 300 mm. Allow for the hob manufacturer's specified safety margin. The same distance is recommended for the gap between the sink and the hob – see Figure 47.

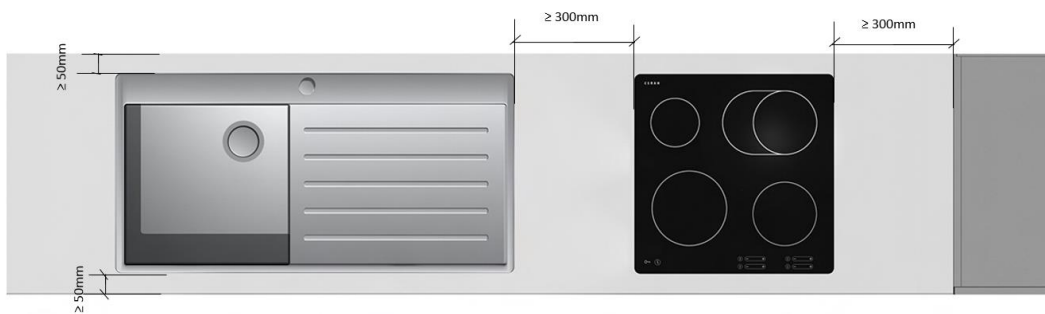


图 47: 台盆与灶台间建议距离
Figure 47: Recommended distance between sink and hob

出于安全原因和人体工程学原因，厨具设计应与厨房专家讨论，并由授权专家进行安装。特别是电、气和水供应的连接必须由训练有素的专家进行。在转角接缝区域，在规划开孔或凹槽时，必须考虑转角区域与开槽处至少有 300mm 的距离，参见图 48 和图 49。

For safety reasons as much as for ergonomic reasons, kitchen designs should be discussed with a kitchen specialist and fitting carried out by an authorised specialist. Particularly electricity, gas and water supply connections must be carried out by trained specialists. In the area of corner joints, a minimum distance of 300 mm must be taken into account when planning cut-outs or recesses – see Figures 48 and 49.

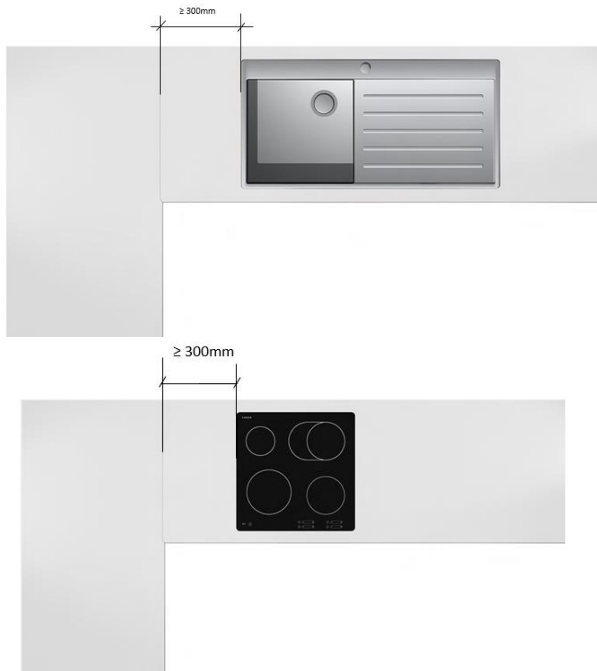


图 48: 最小 300 mm 的最小距离正确示意图
Figure 48: Correct minimum distance of 300 mm

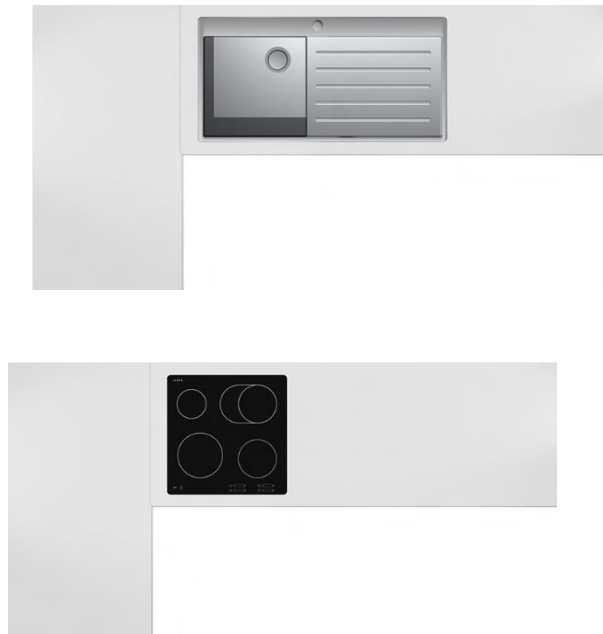


图 49: 不正确的最小距离
Figure 49: Incorrect minimum distance

一旦台面被切割，任何进一步的运输都必须格外小心，以防止板子折断。复合防火板台面必须直立搬运，因为如果板水平搬运，切口更容易损坏。

Once the worktop has been cut, any further transportation must be carried out while observing the utmost caution as to prevent the board from snapping. Compact worktops must be carried upright because cut-outs can be damaged more easily if the boards are carried horizontally.

对于传统的底座单元，通常可以使用标准结构。当建造水槽和/或炊具底座单元时，建议安装金属横杆 — 参见图 50。复合防火板台面通过金属横杆可防止可能的弯曲，台面强度因为水槽和/或灶台的切割而变弱且底座单元上的接触面被缩减到最小化。

For conventional base units, a standard construction can generally be used. When constructing sink and/or hob base units, the installation of metal traverses is recommended – see Figure 50. The compact worktop is secured against possible bending by the metal traverse, as the worktops are weakened by sink and/or hob cut-outs and the contact surfaces on the base units are minimised.

除了稳定外，金属横杆还用于固定台面或其它板结构 (见图 51)。

In addition to stabilising, the metal traverses also serve to fix the worktop or boards – see Figure 51.

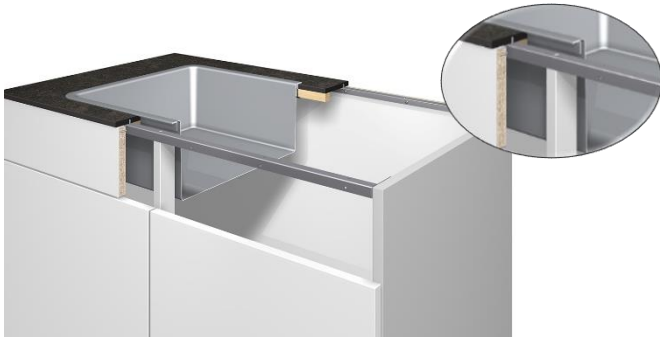


图 50: 使用金属横杆进行加固
Figure 50: Stabilisation with metal traverse



图 51: 使用金属横杆进行加固
Figure 51: Stabilisation with metal traverse

为了安装金属导杆，必须在柜体侧面钻孔。该钻孔包括两个深度分别为 $\varnothing 8\text{mm}$ 和 7mm 的孔。如果使用 $6.3 \times 13\text{mm}$ 的欧洲螺钉进行紧固，则必须再钻一个 $\varnothing 5\text{mm}$ 和 13mm 深的孔 (参见图 51 和图 52)。

To mount the metal traverses, holes must be drilled in the body sides. The drilling pattern includes two holes with $\varnothing 8\text{ mm}$ and 7 mm depth. A further hole with $\varnothing 5\text{ mm}$ and 13 mm depth must be drilled, provided that the fastening is implemented by means of Euro screw $6.3 \times 13\text{ mm}$ – see Figures 51 and 52.

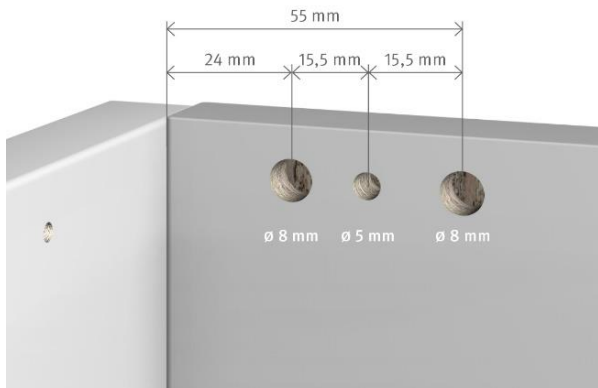


图 51: 推荐的钻孔间距
Figure 51: Recommended distances for drill holes



图 52: 应用举例
Figure 52: Example of application

爱格金属横杆可用于 600、800、900、1000 和 1200 毫米的柜体宽度，以及不同的侧板厚度。提供的紧固螺钉用于安装复合防火板台面。请注意，紧固螺钉是通过金属横杆上的槽孔拧到工作台上的。

The EGGER metal traverses are available for cabinet widths of 600, 800, 900, 1,000 and 1,200 mm, as well as for different body side thicknesses. The supplied fastening screws are used to mount compact worktops. Please note that the fastening screw is screwed to the worktop through the slotted hole in the metal traverse.

更多详细信息，请参考技术数据表“落地柜用爱格金属横杆”。

For more detailed information, please refer to the technical data sheet "EGGER metal traverses for floor cabinets".

4.7 台面板 Worktop joints and corner joints

一般来说，长度为 4,100 毫米的台面板允许无接缝跨距，可避免板接缝。另一方面，台面板转角接缝经常出现。这些地方不应该被如灶台或台盆槽口或切口削弱。台面板上的转角接头是通过圆锯上的斜切或使用 CNC 刨切机和/或在有模板的情况下使用手持刨切机进行制作的 - 见图 53 和 54。

In general, a worktop length of 4,100 mm allows jointless spanning so that board joints are avoided. On the other hand, worktop corner joints occur frequently. These should not be weakened by notches or cut-outs such as for hobs or sinks. Corner joints on worktops are made by mitring on the circular saw or routing using CNC routers and/or using hand-held routers with the aid of templates – see Figures 53 and 54.



图 53: 台面板转角处斜切连接
Figure 53: Corner joint worktop on mitre



图 54: 台面板转角连接
Figure 54: Corner joint worktop

台面板接头和转角接头必须精确而紧密地固定结合。由于复合防火板台面板的匀质结构，所以密封不是必须的。但是，对于对接接头和转角接头的密封可以防止湿气渗入材料内部。为此，爱格密封胶是专门为密封厨房台面板的对接接头 (转角接头) 而开发的。柔性密封胶能很好地防止水气和液体渗透到对接接头中。该密封剂耐清洗剂、水、油脂、油等，有灰色、白色、黑色、棕色四种颜色可供选择。10g 每管的密封剂对于平均长度为 600mm 的对接长度是足够的 - 见图 55。

Worktop joints and corner joints must be made to fit precisely and tightly. With compact worktops, sealing is not necessary due to the homogeneous worktop structure. Sealing of butt joints and corner joints, however, prevents moisture from penetrating into the body. For this purpose, the EGGER sealant was specially developed for sealing the butt joints (corner joints) of kitchen worktops. The flexible sealant reliably prevents the penetration of moisture and liquids into the butt joint. It is resistant to cleaning agents, water, grease, oil, etc., and is available in grey, white, black and brown. The content of the 10 g tube is sufficient for an average butt joint length of 600 mm – see Figure 55.

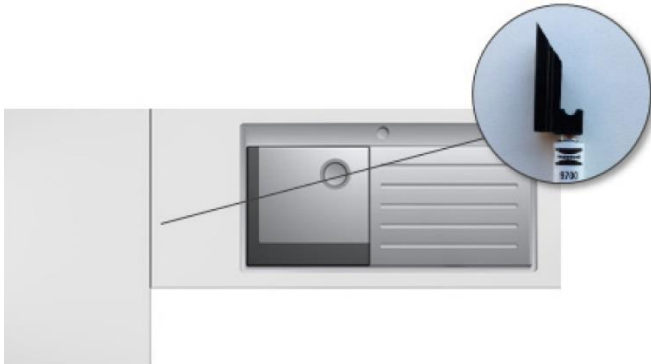


图55: 对接粘合
Figure 55: Butt joint bonding

台面已经在纵向边缘上进行了倒角铣削。如果横向两侧也做倒角，则通常适用于转角接头的轮廓铣削可以省掉。倒角将两个台面相互分开，也就是说，台面前面的倒角被刻意突出，石材台面也是如此 — 见图 56。如果要将防火板台面切割成一定长度，建议使用相同的倒角设计。

The worktop already has bevel milling on the longitudinal edges. If the transverse sides are also bevelled, the contour milling that is usual for corner joints can be dispensed with. The bevel separates the two worktops from each other, i.e. the bevel on the front of the worktop is deliberately accentuated, as is also the case with stone worktops – see Figure 56. If the compact worktop is to be cut to length, it is recommended to apply a bevel of identical design.



图56
Figure 56

对于密封胶的应用，首先应刺穿管上的膜帽，然后拧上黑色的辅助喷头 - 见图 55。然后沿着台面对接接头的顶部，将密封剂均匀地挤出管。在涂上密封剂后，必须立即将台面连接并通过螺钉固定在一起。任何可能逸出的残留物都应立即用合适的清洗剂清除。

The application of the sealant begins with piercing the membrane cap of the tube and then screwing on the black application aid – see Figure 55. The application aid is then guided along the top of the worktop butt joint and the sealing compound is pressed evenly out of the tube. Immediately after applying the sealant, the worktops must be joined and screwed together. Any residue that may have escaped should be removed immediately with a suitable cleaning agent.

更多关于对应台面花色的密封剂颜色组合的详细信息，请参阅技术数据表“转角接头用爱格密封胶”。

For more detailed information and combination recommendations of the colours for the respective worktop decors, please refer to the technical data sheet "EGGER sealing for corner joints".

该类型台面板通过机械式固定辅助系统 (台面板连接器) 实现连接并通过紧固辅助装置 (弹簧导片/薄片) 以及额外的胶黏剂进行固定。由于其材料厚度低, 复合防火板台面板需要使用特殊的台面板连接器进行连接固定。爱格提供的一套相应连接器适用于厚度为 12mm 的台面板 - 见图 57。复合防火板上针对连接器的安装提铣有一个 8 毫米深的槽口。有关其他详细信息, 请参见图 58。

The individual worktops are fastened with the aid of mechanical fastening systems (worktop connectors) and are held in place by the use of fastening aids, so-called spring guides / lamellas, as well as additional gluing. The compact worktop requires the use of special worktop connectors due to its low material thickness. EGGER offers corresponding connectors as a set suitable for 12 mm thick worktops – see Figure 57. The compact laminate mill pocket for the connector is milled 8 mm deep. For additional details see Figure 58.



图 57: 带有台面板连接器的紧固件
Figure 57: Fastening with worktop connector

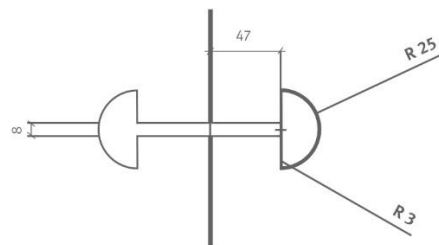


图 58: 针对连接器的槽口
Figure 58: Mill pocket for connector

更多信息, 请参阅技术数据表“爱格台面板连接器”。台面板连接器的数量由台面板宽度决定。一般情况下宽度 ≤ 799 mm 的台面板使用 2 个连接器和宽度 ≥ 800 mm 的台面板使用 3 个连接器。对接接头的平整度是通过使用台面板表面作为铣削弹簧导片槽的参考面并确保它们牢固地固定在一起来实现的。

For further information, please refer to the technical data sheet "EGGER worktop connectors". The number of worktop connectors is determined by the worktop width. Two connectors each up to ≤ 799 mm width and three connectors ≥ 800 mm worktop width are common. The flushness of the butt joint is achieved by using the worktop surface as the reference edge for milling the grooves for the spring guides and by ensuring that they are firmly seated.

加工过程如下:

Proceed as follows:

1. 将台面板放在橱柜框架上, 检查连接处, 包括弹簧导片和槽是否正确搭配;
Lay the worktops on the cupboard framework and check the joints including spring guides and grooves for correct fit.
2. 按第 3.3.1 点“对接接头粘合”的要求涂上胶黏剂;
Apply adhesive as described under point 3.3.1 Bonding of butt joints.
3. 将密封胶 (如爱格密封胶) 均匀连续地涂在铣削部分的上部分或切割边缘, 必要时可使用底涂剂。应在将台面板连接器拧到到位之前做以上步骤;
Apply sealing compound (e.g. EGGER sealant) evenly and continuously to the upper milled or cut edge, if necessary with an application aid. You should do this just before screwing the worktop connectors in place.

4. 连接台面板，插入配件并稍微拧紧螺钉。水平方向采用找平器对齐台面板，垂直方向使用橡胶槌或 G 型夹 (使用钳口)。对准后，用手指拧紧台面板连接器。当拧紧时要注意，两个台面板表面保持对齐且形成密封层。当密封胶硬化时，不要在台面板上施加任何压力。

Join worktops, insert fittings and tighten screws slightly. Align worktops horizontally with wedges or levers and vertically using a rubber mallet or G-clamps (use jaw covers). Tighten worktop connectors fingertight after aligning. Take care when tightening that the two worktop surfaces remain aligned and the sealing compound emerges. Do not place any stress on the worktops while the sealant is hardening.

5. 立即去除多余的密封胶。使用合适的清洗剂 (如柑橘型清洁剂或丙酮) 清洁台面板。注意: 如果丙酮长时间放置，会影响表面。因此，我们建议用遮蔽胶带遮盖对接接头区域。

Remove excess sealing compound immediately. Clean the worktop surface using a suitable cleaning agent such as citrus cleaner or acetone. Caution: Acetone can affect the surface if left for a long period. We therefore recommend masking off the butt joint area with masking tape.

4.8 固定及靠墙接缝 Fastening and wall joint

在密封靠墙的台面板长边缘时，确保它不仅被充分支撑，但也要确保它被连接到底部框架上。否则会产生干扰密封接缝的应力。
Before sealing the long edge of the worktop against a wall, make sure that it is not just adequately supported but is also joined to the sub-frame. Stresses can otherwise occur that will interfere with the sealing joint.

为了连接到主体框架上，台面板既可以用螺丝拧入 (参见 3.4)，也可以施胶 (参见 3.3)。当施胶粘接时，请确保使用具有所需粘接厚度的永久弹性胶黏剂系统，以便能够弹性地吸收台面板的任何运动。无论选择何种固定类型，都必须提供 2mm/m 的伸缩缝。为了使复合防火板适当通风，有必要将主体的上部设计为横板 (见图 59)。

To connect to the body, the boards can be either screwed in (instructions under 3.4) or glued (instructions under 3.3). When gluing, make sure to use a permanently elastic adhesive system with the required adhesive thickness to be able to elastically absorb any movements of the board. Irrespective of the fastening type selected, it is necessary to provide an expansion play of 2 mm/m. In order to properly ventilate the compact laminate, it is necessary to design the upper part of the body as a traverse (see Figure 59).

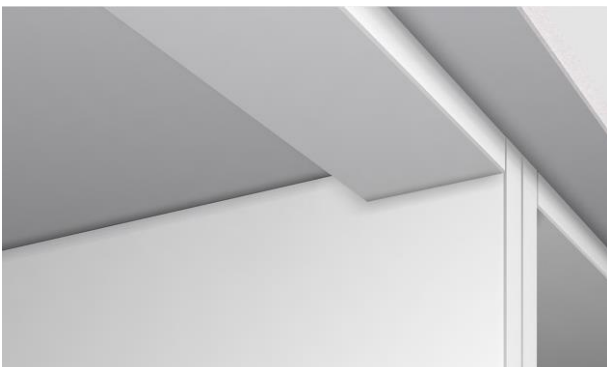


图 59: 顶部的横杆
Figure 59: Top with traverse

两个台面板的转角连接采用防潮连接件，如薄板。
The corner connections of two worktops are achieved with moisture-resistant connection discs, such as lamella.

安装时，请确保台面板不向墙壁倾斜。因为这将导致水在接缝区域聚集。对台面板和墙面接缝处的密封胶区域进行清洁和脱脂处理，并根据所使用的密封化合物，使用粘合剂进行预处理。

When fitting, make sure that the worktop is not tilted towards the wall. This will result in water collecting at the joint area. Clean and degrease around the sealant area on both the worktop as well as the wall joint and pre-treat with a bonding agent depending on the sealing compound used.

后挡水板宜采用防火板贴面板。有关加工和安装的详细信息可在线参照产品的下载区域“挡水板”。

It is advisable to use a laminate bonded board as the splashback panel. Detailed information on processing and installation can be found online at the product "Splashback panels" in the download area.

5. 推荐的清洁方法和用量 Recommended approaches to cleaning and usage

由于爱格复合防火板表面具有耐受性，卫生以及致密特性，所以不需要任何特殊的护理。一般来说，如茶水、咖啡和白酒等污渍和溢出物应立即清理，因为如果任由它们风干，清理的工作量会增加。当有必要时，应使用温和的清洁剂。尤其是清洗剂必须不能含有任何研磨性成分，因为它们可能会对光泽度产生不利的影响或划伤表面。

Due to the hygienic and dense surface, EGGER compact laminate does not require any special form of care. As a general rule, stains and spilled substances such as tea, coffee and wine, etc., should be cleaned up immediately, as the cleaning effort increases if they are left to dry. When cleaning is necessary, mild agents should be used. Cleaning agents must in particular not contain any abrasive components, as they may adversely affect the gloss level or scratch the surface.

日常应用时请务必参照如下的说明:

The following information should be observed for daily use:

→ 将燃烧的香烟放在复合防火板表面会损坏表面。请务必使用烟灰缸。

Placing burning cigarettes on the surface of compact laminate causes surface damage. **Always use an ashtray.**

→ 复合防火板表面不应被用作切割的表面，因为这也会在高耐受性的复合防火板表面留下切痕。请务必使用砧板。

Compact laminate surfaces should not be used as a cutting surface, as this can also leave cutting marks on compact laminate surfaces. **Always use a chopping board.**

→ 应避免将直接从铁架或烤箱热的烹饪餐具（如炖锅和煎锅）放置在复合防火板产品表面，依据不同的热度产品表面的光泽度可能会产生变化或着表面可能会受损。请务必使用隔热装置。

Putting hot items such as pots and pans on the compact laminate surface directly from the hob or straight out of the oven must be avoided, since the gloss level may change or surface damage may occur depending on the heat level. **Always use heat protection.**

→ 经溢出的液体应及时清除，因为某些物质成分暴露时间过长会影响复合防火板产品表面的光泽程度。尤其是产品切口和拼接处，溢出的液体必须迅速彻底的清理干净。

Spilled liquids should always be wiped or cleaned up immediately since extended exposure to certain substances can change the gloss level of compact laminate surfaces. Especially in the areas around cut-outs and joints, spilled liquids should always be cleaned up quickly and thoroughly.

→ 这些建议特别适用于哑光复合防火板表面。具有哑光表面的产品有独特的外观和触觉，但更容易显示磨损的趋势。更多信息详见官网 www.egger.com/compactlaminate “爱格复合防火板清洁与保养指南”信息单页。

These recommendations apply in particular to matt compact laminate surfaces as they are more prone to showing signs of use. More detailed information can be found in our "**EGGER compact laminate cleaning and maintenance instructions**" leaflet at www.egger.com/compactlaminate.

6. 废弃处理 Disposal

由于它们较高的热值，复合防火板非常适合在合适的燃烧厂进行热处理。必须遵守各个国家关于废物处置的具体法律条文和条例。
Due to their very high calorific value, compact laminates are very suitable for thermal disposal in appropriate combustion plants. Specific national laws and ordinances on disposal must be observed in general.

临时说明

Provisional notice:

这些加工说明是基于现有的最佳资料并经严格评估后编写的。数据依据实践经验 and 室内测试并符合我们目前的知识水平。该文件仅供参考，不作为产品特性或特殊用途适用性的担保。我们对任何错误、标准中的错误或印刷错误不承担任何责任。另外，由于爱格复合防火板产品的持续开发、相关产品标准以及法律文件的变更都可能产生技术层面的修改。因此，该文件内容不应被视为使用说明或法律约束文件。适用于我们的一般条款和条件。

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