

DIATHONITE DEUMIX+

Eco-friendly, thermal, and salt-resistant dehumidifying plaster

Microporous lightweight plaster that combines the properties of a dehumidifying plaster and an anti-salt rough coat in a single product. *Diathonite Deumix+* is designed for dehumidification interventions and, at the same time, prevents salts from migrating towards the wall surface. The product is composed of natural materials such as cork (grain size 0-3 mm), clay, and natural hydraulic lime NHL 5, along with special additives that improve the adhesion and breathability of the product. The macropores that characterize its structure are able to accommodate the salts present in the masonry and allow the water to evaporate.

YIELD

4,40 kg/m² (±10%) per cm of thickness.
0.90 lb/ft² (±10%) per inch of thickness.

PACKAGING

20 kg paper bag.
Pallet: n° 60 paper bags (1200 kg).

APPEARANCE AND COLOR

Powder | Light Grey

STORAGE

Store the product in its original, tightly closed packaging, appropriately protected from sun, water, frost, and maintained at temperatures between +5°C and +35°C. > Shelf life: 12 months.

FIELDS OF APPLICATION

Designed for application in both indoor and outdoor contexts, *Diathonite Deumix+* represents the ideal solution for the restoration of masonry degraded by rising damp, including particularly stressed below-grade structures. The plaster acts as an integrated system that neutralizes the migration of salts towards the surface, resolving the issues related to the

appearance of indoor mould and condensation at the root. It represents an excellent choice in restoration and green building projects, where the need to restore environments meets the necessity of ensuring high living comfort and maximum air healthiness.

BENEFITS

- High porosity.
- High breathability.
- Lightweight and eco-friendly.
- Excellent water-repellent properties.
- Fireproof.
- Low thermal conductivity.
- Applicable to all types of damp masonry by hand or with a plastering machine.
- Respects the thermo-hygrometric balance of the substrate.
- Perfect compatibility with lime-based and silicate mineral finishes.
- Double CE marking (EN 998-1, EN 998-2).

PREPARATION OF THE SUPPORT

The substrate must be fully cured and have sufficient strength. The surface must be thoroughly clean, dry, well-consolidated, free of friable and loose parts, and perfectly levelled.



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Any cracks, discontinuities, or degraded portions must be repaired beforehand. Before application, protect all elements that are not to be affected by the coating. For substrates not listed in the technical data sheet, please contact the Diasen technical office.

Bricks/Blocks

No primer is required; the application can be carried out directly onto the brick substrate.

Concrete

In the presence of damaged and friable concrete, proceed with the restoration using a suitable cement-based repair mortar. Any exposed reinforcing bars must be previously treated with specific passivating and/or anti-corrosive products suitable for structural repair.

- **Smooth Concrete:** provide for the application of *Aquabond* primer (see technical data sheet).
- **Rough Concrete:** no primer is required; the application can be carried out directly onto the substrate.

Cellular Concrete

Diathonite Deumix⁺ can be applied directly onto aerated concrete substrates, without the need for a primer.

Hemp-lime or hemp-concrete blocks

Application on hemp-lime or hemp-concrete blocks is possible only if *Diathonite Deumix⁺* is reinforced with *Polites 140* fibreglass mesh (refer to technical data sheet).

Masonry

If necessary, clean the surface by pressure washing or brushing. Check the condition of the masonry and restore damaged or unstable bricks or stones.

On substrates requiring levelling, use lime-based mortars to preserve breathability, such as *Diathonite Regularization* or *Calce Storica*.

Old plaster

Ensure the plaster is sound and well-adhered to the substrate; otherwise, provide for partial or total removal. In the presence of salts, provide for the removal of the damaged plaster and the direct application of *Diathonite Deumix⁺*.

On smooth plasters and in the case of painted plasters, given the wide variety of paints on the market, it is recommended to remove the paint or to scabble the substrate, and then provide for the application of *Aquabond* primer (refer to technical data sheet).

On rough plasters, proceed with the direct application of *Diathonite Deumix⁺*. Before application, always verify that the existing plaster is compatible with the characteristics and composition of *Diathonite Deumix⁺*.

For gypsum-based plasters, complete removal is recommended to avoid compromising the stability of the system due to material incompatibility.

Panels and wood

On untreated **cork** or **lime-hemp panels**, apply *Diathonite Deumix⁺* without a primer. On **wood panels** (OSB, CLT, wood fiber), **fiber cement boards** (e.g., Aquapanel), and **exterior gypsum boards**, the use of *Aquabond* primer is necessary.

For a professional result, ensure that the panels are tightly joined together and that the mechanical fastening is capable of supporting the weight of the plaster.

In any case, provide reinforcement with a fiberglass mesh such as *Polites 140* at half the thickness of *Diathonite Deumix⁺*.

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APPLICATION BY PLASTERING MACHINE

Suggested plastering machines

The indicated plastering machines represent only some of the models available on the market. Other models with equivalent characteristics and performances can be used. All recommended models use screw or rotary systems, but the speed, mixer size, and screw geometry differ. Therefore, the consistency and flow of the plaster may require minor adjustments to the water/material ratio to achieve optimal results.

- PFT G4
- PFT Ritmo XL
- Imer Koine 4
- Turbosol Giotto 4
- Putzmeister MP 25

In the case of application with the aforementioned *three-phases* plastering machines, the ideal equipment includes the installation of a new **D6-3 stator/rotor (screw pump)** and a **closed shafts mixer**. The setup must be completed with a tapered hose (**Ø 35/25 mm**) and a **14 or 16 mm** nozzle to ensure the correct projection of the product.

- PFT G5

In the case of application with the aforementioned plastering machine, the ideal equipment includes the installation of a **D6 – 2L stator/rotor (screw pump)** and a **closed shafts mixer**. The setup must be completed with a **tapered hose** (length 150 mm, Ø 35/25 mm) and a **16 mm nozzle** to ensure the correct projection.

- Putzmeister SP 11 LMR

For this diesel plastering machine, the setup must include a **2L6 screw pump (stator/rotor)**, a **250 mm** long hose with a **35 mm diameter**, and a **spray gun** with a **16 mm** nozzle.

Mixing

Load the contents of the bags into the hopper. Adjust the machine's flow meter first to **400-600 L/h** to moisten the hose, then to **200-300 L/h** for regular application. The mixture must appear as a **light and foamy mass**, characterized by a widespread and homogeneous micro-alveolar structure, and must be *matte* (free from shine). To avoid altering the chemical-physical balance of the compound, the addition of any foreign product is strictly prohibited. Depending on the water absorption rate of the substrate and the environmental conditions, it is recommended to dose the correct amount of water necessary to achieve proper adhesion. The specified water quantity is indicative.

Application

1. It is essential to moisture the substrate, especially during the summer period and on masonry exposed to the sun. If the surface has already been primed, proceed directly with the application.
2. Create reference points or screed strips to achieve the required thicknesses. Points or strips can be made using *Diathonite Deumix⁺* or with aluminium or wooden profiles. In the latter two cases, the strips must be removed immediately after applying the last layer of plaster and filled with *Diathonite Deumix⁺*.
3. Corner profiles (made of PVC, stainless steel, or CMP | in any case lime-resistant) can be positioned together with the screed strips, but must always be placed before applying the final coat.
4. In the case of applications on multi-storey buildings, use aluminium corner beads to secure the corners; these must be fixed with the plaster itself to avoid thermal bridges.
5. Moisten *Diathonite Deumix⁺* before the application of each coat.

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6. Spray the product from bottom to top, applying a first coat of *Diathonite Deumix⁺*, taking care to create a thickness of **up to 40 mm**.
7. If the design thickness is not reached with the first coat, apply additional layers of *Diathonite Deumix⁺* only when the underlying layer is dry to the touch and visually lighter in colour (approx. 12–24 hours), maintaining a thickness of **≤ 40 mm** per coat.
8. Spray *Diathonite Deumix⁺* with as few interruptions as possible. Otherwise, soak the nozzle in water to prevent the formation of a clog (material plug) inside the spray gun.
9. For thicknesses **exceeding 60 mm**, it is mandatory to incorporate *Polites 140* fibreglass mesh at approximately mid-thickness of the overall layer. Regardless of the thickness, the use of the mesh is also recommended on panels and wooden substrates, on surfaces subject to movement, on composite materials other than those mentioned, and at critical points such as doors, windows, and openings.
10. In correspondence with beams and columns, the mesh must overlap onto both sides of the concrete element by at least **150 mm**.
11. During the levelling phase, do not compress *Diathonite Deumix⁺* to preserve the product's porosity. Use an H-profile straight edge or a knife-edge screed, working in both horizontal and vertical directions until a regular surface is obtained.

the environmental conditions, it is recommended to dose the correct amount of water necessary to achieve proper adhesion. The specified water quantity is indicative.

Application

1. It is essential to moisten the substrate, especially during the summer period and on masonry exposed to the sun. If the surface has already been primed, proceed directly with the application.
2. Create reference points or screed strips to achieve the required thicknesses. Points or strips can be made using *Diathonite Deumix⁺* or with aluminium or wooden profiles. In the latter two cases, the strips must be removed immediately after applying the last layer of plaster and filled *Diathonite Deumix⁺*.
3. Corner profiles (made of PVC, stainless steel, or CMP | in any case lime-resistant) can be positioned together with the screed strips, but must always be placed before applying the final coat.
4. In the case of applications on multi-storey buildings, use aluminium corner beads to secure the corners; these must be fixed with the plaster itself to avoid thermal bridges.
5. Moisten *Diathonite Deumix⁺* before the application of each coat.
6. Apply with a trowel a coat of *Diathonite Deumix⁺* taking care to create a thickness of **up to 40 mm**.
7. If the design thickness is not reached with the first coat, apply additional layers of *Diathonite Deumix⁺* only when the underlying layer is dry to the touch and visually lighter in colour (approx. 12–24 hours), maintaining a thickness of **≤ 40 mm** per coat.
8. For thicknesses **exceeding 60 mm**, it is mandatory to incorporate *Polites 140* fibreglass mesh at approximately mid-thickness of the overall layer. Regardless of the thickness, the use

APPLICATION BY HAND

Mixing

If mixed in a concrete mixer or with a drill mixer, add **11–13 L** of clean water for each bag of *Diathonite Deumix⁺* (20 kg). Do not mix the compound in the cement mixer for more than **3–4 minutes**. Depending on the water absorption rate of the substrate and

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of the mesh is also recommended on panels and wooden substrates, on surfaces subject to movement, on composite materials other than those mentioned, and at critical points such as doors, windows, and openings.

9. In correspondence with beams and columns, the mesh must overlap onto both sides of the concrete element by at least 150 mm.
10. During the levelling phase, do not compress *Diathonite Deumix⁺* to preserve the product's porosity. Use an H-profile straight edge or a knife-edge screed, working in both horizontal and vertical directions until a regular surface is obtained.

CEILING APPLICATION

For ceiling applications, *Diathonite Deumix⁺* must be applied using plastering machines.

1. If the surface is not primed with *Aquabond*, moisten the substrate.
2. Create screed strips to achieve the desired thickness, as specified in the previous paragraphs.
3. Apply *Diathonite Deumix⁺* in layers with a maximum thickness of 20 mm.
4. Embed *Polites 140* fibreglass mesh at mid-thickness of the total layer, applying it while the product is still fresh, ensuring an overlap of **150 mm** at the joints. Avoid the formation of ripples or bubbles.
5. Apply the second coat of plaster only when the underlying layer has sufficiently hardened, ensuring that the reinforcement mesh is completely embedded and without leaving any holes on the surface. On unstable substrates or for high thicknesses, it is advisable to secure the mesh with plugs or nails.
6. The screed strips must be removed when the plaster surface is compact and not moisten to the touch. The

voids left by the strips must be filled with *Diathonite Deumix⁺*.

7. During the levelling phase, do not compress *Diathonite Deumix⁺* to preserve the product's porosity. Use an H-profile straight edge or a knife-edge screed. The product must not be trowelled or floated.

DEHUMIDIFYING SYSTEM

Dehumidification from the inside of a counter-earth wall

1. Totally scarify the damaged surface down to the brick or stone starting from the floor level, removing the skirtings.
2. After removing the damaged layer, if necessary, apply a rough-coat using *Diathonite Regularization*, in accordance with the instructions provided in the technical data sheet.
3. Apply *WATstop* (see technical data sheet) to block counter-pressure moisture.
4. Before *WATstop* is completely dry (within 48 hours), apply the *Diathonite Deumix⁺* dehumidifying plaster by hand or with a plastering machine, with a minimum thickness of 25-30 mm.

Dehumidification from the inside of a semi-basement wall

1. Totally scarify the damaged surface down to the brick or stone starting from the floor level, removing the skirtings.
2. After removing the damaged layer, if necessary, apply a rough-coat using *Diathonite Regularization*, in accordance with the instructions provided in the technical data sheet.
3. Apply *WATstop* at least up to the ground line to block counter-pressure moisture.
4. Before *WATstop* is completely dry (within 48 hours), apply the *Diathonite Deumix⁺* dehumidifying plaster by hand or with a plastering machine, at a height up to 500 mm

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above the ground line, with a minimum thickness of 25–30 mm.

Dehumidification from the inside or from the outside of an above-ground wall

1. Totally scarify the damaged surface down to the brick or stone starting from the floor level, removing the skirtings.
2. After removing the damaged layer:
 - 2.1. If necessary, apply a rough-coat using *Diathonite Regularization*, in accordance with the instructions provided in the technical data sheet.
 - 2.2. If it is not necessary to restore the surface, proceed by wetting the substrate one hour before application.
3. Apply the *Diathonite Deumix+* dehumidifying plaster by hand or with a plastering machine, with a minimum thickness of 25–30 mm.

DRYING TIMES

At a temperature of 23°C and a relative humidity of 50%, the product dries in 10–15 days.

- Drying times are influenced by the relative humidity of the environment and the temperature, and can vary significantly.
- When applied in high thicknesses, drying times increase significantly.
- During the curing phase, protect *Diathonite Deumix+* from frost, wind, direct sunlight, and adverse weather conditions.
- It is necessary to moisten the plaster 2–3 times a day for the first 2–3 days following application.
- In general, at temperatures above 28°C, moisten the plaster every 2 hours to prevent cracking.
- If applied indoors, ventilate the room as much as possible during the application and drying phases.

- When applied outdoors, in order to avoid prolonged exposure to adverse weather conditions, it is essential to proceed as follows:
 - after applying the last layer of *Diathonite Deumix+* and waiting for the complete curing (not before 10–15 days), it is recommended to coat the plaster with the chosen finishing skim coat.
 - Once the latter is completely cured (not before 7 days), apply the finish.

SANDED DIATHONITE

Carefully protect floors, window frames, and other elements using protective sheets or masking tape. To prepare the floors, use a single-disc floor machine equipped with a diamond disc to remove irregularities and prepare the substrate.

On large wall surfaces, the use of a long-reach sander with a low-speed disc is recommended, such as the **LHS 2 225 EQI-Plus PLANEX** (Power: 400 W; eccentric motion¹; speed: 5,000 – 8,500 rpm; sanding stroke: 4.00 mm; backing pad diameter: 220.00 mm; abrasive diameter: 225.00 mm; length: 1.2/1.65 m; dust extraction connection Ø: 36/27 mm). During the process, proceed with uniform and light movements, avoiding concentrated pressure on a single point to prevent creating hollows. Any protrusions or excess material must be removed, periodically checking the flatness and regularity of the treated surface. To remove the most evident irregularities, initially use coarse-grained sandpaper (40–60 grit), then complete the operation with fine-grained sandpaper (80–120 grit) to achieve a surface that is perfectly smooth to the touch before the final coating. After sanding, carefully remove the dust produced using soft brushes or a professional vacuum cleaner, always ensuring adequate ventilation in indoor environments to promote the dispersion of volatile residues.

¹ Eccentric movement

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As a final step, protect the surface by applying *Aquafloor Eco* (see technical data sheet), following the instructions in the relevant technical data sheet.

SMOOTHING AND FINISHING

For plaster smoothing, in both indoor and outdoor environments, it is possible to use the following finishing compounds: *Argatherm*, *Argacem Ultrafine* and *Argacem Coloured*. For application methods, drying times, and recommended thicknesses, please refer to the respective technical data sheets.

Outdoor Applications

For the finishing of skim coats in outdoor environments, use products such as *Decork Façade*, *Decork Alfareflex*, *Decork Mediterraneo*, *Acrilid Protect Coating*, or *Plasterpaint* (refer to the products' technical data sheets), always ensuring the use of breathable and water-repellent finishes.

Indoor Applications

For indoor environments, the use of finishes such as *Decork Mediterraneo*, *Decork Design*, *C.W.C. Stop Condense*, or *Limepaint* (refer to the products' technical data sheets) is recommended, always prioritizing breathable products. In any case, it is advisable to refer to Diasen finishes.

FINISHING LAYERS

Like all plasters in the *Diathonite* range, *Diathonite Deumix⁺* must be reinforced with *Polites 140* fiberglass mesh when the installation of coatings such as tiles, stones, stoneware, or similar materials is planned, following the application methods described in the previous paragraphs. Subsequently, the surface must be finished with *Argatherm* finishing plaster, as indicated in its technical data

sheet. To increase the system's resistance, *Argatherm* must be installed using *Polites 80* reinforcement mesh (refer to technical data sheet) with a sandwich system (*Argatherm* + *Polites 80* + *Argatherm*). In wet areas, before laying the tiles, apply *WATstop* over *Argatherm*² following the instructions in the technical data sheet. It is recommended to observe a maximum interval of 24 hours between successive coats and to complete the application of the final layer within 48 hours. The maximum permitted weight for tiles is 45 kg/m².

SUGGESTIONS

- Do not apply when ambient or substrate temperatures are below +5°C (41°F) or above +30°C (86°F).
- During the summer season, apply the product during the coolest hours of the day, sheltered from direct sunlight.
- Do not apply if there is an imminent risk of rain or frost, in conditions of thick fog, or when relative humidity exceeds 70%.
- Where deemed necessary, and only after contacting the Diasen technical office, it is possible to apply a first layer of *Diathonite Deumix⁺* as a rough-coat, either by hand or by spray.
- It is recommended to waterproof and protect the points most subject to hygrometric stress, such as at the base of the wall near the ground or at the junctions between the flat roof slab and the external walls.
- If applied internally, it is essential that the external surface does not absorb water. Otherwise, treat the surface with *BKK Eco*.
- In the event of application where *Diathonite Deumix⁺* is left exposed, it is mandatory to protect the product with one of the *Diasen* transparent protective coatings,

² Argatherm helps control absorption and ensures more efficient coverage of WATstop.

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- depending on the area of application.
- In case of doubts regarding the consistency of the substrate and/or potential physical-chemical and mechanical incompatibilities between *Diathonite Deumix⁺* and the substrate, it is recommended to carry out an adhesion test, identified and coordinated by the Site Management of the project in question.
- If the total thickness of the application exceeds 120 mm, it is necessary to provide for the insertion of at least two reinforcement meshes. The positioning of the meshes and the choice of the technical

configuration must be confirmed by the Site Management, also based on the assessment of structural movements and stresses of the support.

CLEANING

The equipment used can be washed with water before the product hardens.

SAFETY

During handling, use personal protective equipment and comply with the information provided in the product's safety data sheet.



ISO 9001®
QUALITY



ISO 14001®
ENVIRONMENT



ISO 45001®
SAFETY

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TECHNICAL SPECIFICATIONS

* The reported data, although obtained using standardized testing methodologies, are indicative and may be subject to change depending on specific site conditions.

PHYSICAL / TECHNICAL DATA*		
TECHNICAL DATA	VALUE	UNIT
Yield	4.40 (±10%) <i>for each cm of thickness</i>	kg/m ²
	0.90 (±10%) <i>per inch of thickness</i>	lb/ft ²
Aspect	powder	-
Colour	light grey	-
Density	450 (±10%)	kg/m ³
	28.09 ± 0.62	lb/ft ³
Grain size	0 – 3	mm
	0 – 0.11	in
Water to add to the mixture	0.55 – 0.65 L/kg <i>11 - 13 L for each 20 kg bag</i>	L/kg
	0.066 – 0.078 gal (US) <i>per paper bag (44.09 lb)</i>	gal (US) / lb
Minimum thickness	20 / 0.8	mm/inches
Maximum thickness per coat	40 / 1.6	mm/inches
Maximum thickness for ceiling applications	40 / 1.6	mm/inches
Application temperature	+5 / +30	°C
	+41 / +95	°F
Drying time (T=23°C; U.R. 50%)	10-15	days
Storage	12	months
Packaging	20 kg (44 lb) paper bag	kg

PERFORMANCES*				
FINAL PERFORMANCES	VALUE	UNIT	STANDARDS	RESULTS
Reaction to fire	class A1	-	UNI EN 13501-1	-
Compressive strength	6,80	N/mm ²	EN 998-1	category CS III
	739.69	lbf/in ² (psi)	EN 998-2	M5
Flexural strength	2,90	N/mm ²	UNI EN 1015-11	-
	203.05	lbf/in ² (psi)		
Adhesion onto the support (brick)	0,258	MPa = N/mm ²	UNI EN 1015-12	Break type: C
Vapour permeability coefficient (μ)	4	-	UNI EN 1015-19	highly breathable
	WVT = 14	grains/h-ft ²	ASTM E96	
Thermal conductivity (λ)	0,080	W/mK	UNI EN 1745	-
Thermal resistance (R) per 1 cm of thickness	0,125	m ² K/W	UNI 10355	-
Water absorption by capillarity (90 minutes)	-	-	UNI EN 1015-18	category W0
Dried mortar porosity	71,64%	-	-	-

DIASEN

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Cap. Soc. € 400.000,00 i.v.

The indications and requirements reported, although representing our best experience and knowledge, are to be considered indicative and must be confirmed by exhaustive practical applications. Diasen does not know the specificities of the processing and even less the determining characteristics of the application support. Therefore, before using the product, the applicator must in any case carry out preliminary tests, aimed at verifying the perfect suitability for the intended use and, in any case, assumes all responsibility that may derive from its use. In case of uncertainty and doubts, contact the company's technical office before starting the work, it being understood that such support constitutes a simple aid for the applicator, who must in any case guarantee the possession of adequate skills and experience for the installation of the product and for identifying the most suitable solutions. Always refer to the latest updated version of the technical data sheet, available on the website www.diasen.com, which cancels and replaces any other.

DIATHONITE DEUMIX⁺

Eco-friendly, thermal, and salt-resistant dehumidifying plaster

Elastic modulus (average value)	1,50	GPa	UNI EN 1015-19	-
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INDOOR AIR QUALITY (IAQ) CERTIFICATION		
Evaluation of the results		
Regulation or protocol	Version of regulation or protocol	Conclusion
<i>French VOC Regulation</i>	Decree of March 2011 (DEVL1101903D) and Arrêté of April 2011 (DEVL1104875A) modified in February 2012 (DEVL1133129A)	
<i>French CMR components</i>	Regulation of April and May 2009 (DEVP0908633A and DEVP0910046A)	Pass
<i>Italian CAM Edilizia</i>	Decree 11 October 2017 (GU n.259 del 6-11-2017)	Pass
<i>AgBB/ABG</i>	Anforderungen an bauliche Anlagen bezüglich des Gesundheitsschutzes, ABG May 2019, AgBB August 2018	Pass
<i>Belgian Regulation</i>	Royal decree of May 2014 (C-2014/24239)	Pass
<i>Indoor Air Comfort®</i>	Indoor Air Comfort 7.0 of May 2020	Pass
<i>Blue Angel (DE-UZ 113)</i>	DE-UZ 113 for "Low-Emission Floor Covering Adhesives and other Installation Materials" (Version January 2019)	Pass
<i>BREEAM International</i>	BREEAM International New Construction v2.0 (2016)	Exemplary Level
<i>BREEAM® NOR</i>	BREEAM-NOR New Construction v1.2 (2019)	Pass
<i>LEED®</i>	"Low-Emitting Material" according to the requirements of LEED v4.1	Pass
<i>CDPH: Classroom scenario</i>	CDPH/EHLB/Standard Method V1.2. (January 2017)	Pass

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