



wedi® Vapor 85

Technical Data Sheet



- High performance Water-and Vapor-proof building panel for Steam showers/ Steam rooms.
- wedi® Vapor 85 Building Panel is used on walls, ceilings, or bench structures in steam room/steam shower installations.
- wedi® Vapor 85 is used in combination with wedi Subliner Dry Product systems and wedi® Sealant 620.
- wedi® Vapor 85 Building Panels are directly tileable upon installation.
- A lightweight Building Panel that can be used for fast, clean and exact cutting and provides a strong tile backing performance.
- Can be used with all high-quality thinset mortars suitable for steam shower/steam room applications.

Product advantages and use

wedi® Vapor 85 is a special variant of the wedi Building Panel and is designed for installation in steam showers and steam rooms. It will serve as a strong vapor retarder, by far exceeding the minimum requirements set by the Tile Council of North America (TCNA) for vapor retarders used in continuous use steam rooms. Additionally, it offers all the benefits of the traditional, time tested wedi® Building Panel: it is light, yet strong; it adds insulation and provides great bond for tile and other suitable surface finishes; it is a component of a fully functioning system which was developed to also vapor-proof seams, and fastener penetrations. The wedi® Vapor 85 makes best use of wedi system technology taken from the wedi® Building Panel, wedi® Subliner Dry, wedi® Subliner Dry Sealing Tape, and wedi® Joint Sealants. Additionally, it works great with wedi Fundo or Subliner Dry on steam room floors.

When comparing wedi® Vapor 85 Building Panel to traditional cement board plus liquid waterproofing, the value is clear:

- wedi offers single-product installation versus multiple products and steps
- wedi offers one comprehensive warranty versus multiple manufacturer and labor warranties
- wedi dramatically reduces installation and labor time, curing times, and overall physical effort and mess
- wedi offers a waterproof and water resistant all-in-one tile backerboard

When installing wedi® Vapor 85 Building Panels in a wet area, it often costs less, but adds substantially more value to a project.

wedi® Vapor 85 Building Panels are often used with:



Technical Properties ■ wedi Systems

Properties & Test Methods Value (wedi Building Panel and Fundo Shower System Components)		
Standard Specification for Rigid, Cellular Polystyrene	ASTM C 578 *	Compliant
Thermal Conductivity *	75°F (25°C) - ASTM C518	0.23 Bbtu in/hr F
R-Value *	75°F (25°) - ASTM C518	4.3hr ft. 2 F/Btu/in (R Value for 1" wedi = 4.3)
Tensile Strength ***	ASTM D1623-09	76 psi
Shear Strength *	Under conditions required in ANSI A118.10-1999	7 day Shear Strength Dry: 159 psi 7 day Shear Strength Wet: 112 psi 4 week Shear Strength Dry: 216 psi 12 week Shear Strength Dry: 217 psi 100 day Shear Strength Wet: 201 psi
Waterproof *	ASTM D4068 / ANSI A118.10-1999	Passed
Waterproofness of Assembly *	ASTM E331	Passed, wedi Fundo Kit assembly (complete system)
Robinson Floor Test *	ASTM C627	Heavy duty commercial use, passed *
Fastener Pull Through *	ASTM C473	Wet 131.8 lb./Dry 196.2 lb.
Temperature Limits *		-58 / +175° F
Freeze & Thaw *	ASTM C666 - 25 Cycles	No disintegration/change; Passed
Accelerated Aging *	AC 71 - 25 Cycles	No disintegration; Passed
Surface Burning Characteristics *	ASTM E84-16 (NFPA 255, ANSI / UL 723, UBC 8-1) Tested as required without tile on Building Panel surface	Flame Spread Index (FSI): 20 Smoke Developed Index (SDI) : 70 Classification: Class A
Seam Strength*	ASTM D751-11 (requirement 8 lb/in width)	Passed, 36.4 lbs

* wedi Building Panel tested

*** Entire wedi shower system tested

**** "Vapor 85 assembly incl. seams". Test standard is ASTM E 96 Method E at 100 F* and 90 % R.H.

* Consult wedi for proper subfloor, tile, setting materials choice to design heavy duty commercial use floor surfaces.

Weight for wedi Building Panels	Width	Length	Thickness	Weight
	48 in.	60 in.	1/4 in.	13.9 lb.
	48 in.	60 in.	1/2 in.	14.4 lb.

Approvals & Certificates				
Approvals and certificates applicable to entire Fundo Shower System incl. wedi Building Panel	City of New York, MEA 912-52-SM	Fundo Shower Systems & Building Panels: ICC PMG 1189 (for USA and Canada)	Meets all applicable ANSI/ISO Standards incl. ANSI 118.10 and IAPMO PS106	TCNA handbook recognized for wall, floor, countertop, & more applications
	City of Los Angeles Approved. Please see ICC PMG report.	BBA (British Board of Agrément)	DIN EN ISO 9001	CE marked
	Diverse State Approvals			
	SAI Global Watermark Certified (Australia & New Zealand)			

Environmental Consideration
Contains no unbonded fire retardants like HBCD (Hexabromocyclododecane) which has been banned in Canada and is a toxic substance of high concern with the US EPA.

Property	Test Method	Specimen Results							Requirement
		#1	#2	#3	#4	#5	Avg	St Dev	
wedi Subliner Dry 20 mil nominal thickness Desiccant Method; Test @ 100.0±1.8°F & 90±2 % RH	ASTM E 96 (Procedure E)								
	Thickness (mil)	19.5	19.7	19.3	19.7	18.9	19.4	0.33	Report
	WVT (grains/h-ft2)	0.084	0.091	0.085	0.092	0.090	0.089	0.003	Report
	Permeance (Perms)	0.05	0.05	0.05	0.05	0.05	0.051	0.002	Report

Test Methods: ASTM E 96/E96M-13

Results Summary: Procedure E - Dry Cup @ 100.0±1.8°C & 90±2 % RH WVT 0.09 grains/h-ft2 Permeance 0.05 Perms

Purpose: Determine the water vapor transmission performance of the product in accordance with ASTM E 96: Standard Test Methods for Water Vapor Transmission of Materials.

ICC-PMG 1189 Report ■ National Building Code Compliances

WEDI FUNDO SHOWER SYSTEM AND TILE BACKER BOARD UNDERLAYMENTS	
CSI	DIVISION: 22 00 00 – PLUMBING Section: 22 40 00 – Plumbing Fixtures (Shower System Kit)
Product certification system	The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.
Product	wedi Fundo Shower System and Tile Backer Board Underlayments
Listee	wedi Corporation ■ 1160 Pierson Drive, Batavia, IL 60510 www.wedicorp.com
Compliance with the following codes	2021, 2018, 2015, 2012 and 2009 International Plumbing Code® (IPC) 2021, 2018, 2015, 2012 and 2009 International Residential Code® (IRC) 2021, 2018, 2015, 2012 and 2009 International Building Code® (IBC) 2021, 2018, 2015, 2012 and 2009 National Standard Plumbing Code® (NSPC) 2021, 2018, 2015, 2012 and 2009 Uniform Plumbing Code® (UPC)* 2019, 2016 and 2013 California Plumbing Code (CPC)* 2020 and 2017 City of Los Angeles Plumbing Code 2015, 2010 and 2005 National Plumbing Code of Canada** * Uniform Plumbing Code is a copyrighted publication if the International Association of Plumbing and Mechanical Officials ** National Plumbing Code of Canada is a copyrighted publication of National Research Council Canada
Compliance with the following standards	ANSI A118.10-2020, Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installations ASME A112.6.3-2019, Floor and Trench Drains ASTM E 96-2021, Standard Test Methods for Gravimetric Determination of Water Vapor Transmission of Materials ASTM E 331-00(R16), ASTM E331-00(2016) Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference ICC-ES EG 159, Evaluation Guideline for Composite Backer Board (Approved Dec 2004) ICC-ES AC 71, Acceptance Criteria for Foam Plastic Sheathing Panels Used as Water Resistive Barriers (Approved Feb 2003, Ed Revised Nov 2018) IAPMO PS 46-2012, Field Fabricated Tiling Kits IAPMO PS 106-2015e1, Tileable Shower Receptors and Shower Kits
Identification	Packaging label for each system shall include the manufacturer's name or trademark as well as the ICC-ES PMG certification mark.
Installation	The wedi Fundo Shower Systems shall be installed in accordance with the manufacturer's published instructions and the applicable code(s). The wedi Fundo Shower system components shall be assembled and can be customized in the field. When provided drains must comply with ASME A112.18.2/CSA B125.2 as applicable. The wedi pre-sloped, ready-to-tile shower bases may be used in lieu of a CSA B45.5/IAPMO Z124 plastic shower receptors or any liner based shower installations. The wedi drain units do not require weep holes.
Listed Models and Characteristics	The wedi Fundo Shower Systems consist of the following: a) The wedi waterproof Fundo show bases are waterproof, pre-sloped, ready-to-tile floor units. The shower bases with linear and point drainage include factory sealed parts integrated into the floor bases and can be installed with or without curbs in recess, barrier free installations. b) The wedi waterproof building panels which are engineered as a general purpose backer board and underlayment for tile as well as an integral part of the Fundo shower system and consist of a rigid extruded polystyrene foam covered on both sides with a cement-based resin surface and reinforcing mesh for durability and bond performance with tile adhesives. c) the wedi Vapor 85 Building Panel which may be used with or without wedi shower systems. It is a specialized building panel featuring the original wedi Building Panel but with its vapor exposed side protected by wedi Subliner Dry. The wedi Vapor 85 was tested to ASTM E96 Procedure E as a complete assembly with the wedi 620 joint sealing membrane and wedi Subliner Dry sealing tape over seams and fastener points and was found to have a perm rating of 0.03 perms which meets the permeance rating requirement of 0.5 perm or less and can be used in continuous use steam shower/room applications without additional vapor retarders in accordance with Tile Council of North America (TCNA) 2014 Handbook for Ceramic Glass and Stone Tile Installation (SR613-14 and SR614-14). d) The wedi waterproof Fundo Shower system accessories which may include the following waterproof components: wedi pre-sloped curbs, wedi niches, wedi seats, wedi fasteners, wedi drain cover plates, wedi sealants, wedi Fundo drains, wedi Subliner sheet waterproofing membrane system and tapes, with wedi Subliner Dry Bonding Flange drain, wedi Subliner Dry Tub Sealing Tape. The wedi Fundo family line includes the following: Primo, Riolo, Riolo Modular, Riofino, Discreto, Ligno and OneStep. The wedi Fundo Shower system components and assembly for shower installations were proven to be waterproof, water-resistant, and mold resistant when tested in accordance with A118.10-2014 and ASTM E331. The wedi drains have found to comply with with ASME A112.18.2/CSA B125.2 and do not require weep holes.

Limitations, Structural Design, Construction, Building Materials, Technical Equipment- Before Surface Finish Installation

Steam rooms are designed to be closed rooms within which a special environment and climate exists during operation, and it exists parallel and is different compared to the climate outside that room. Steam rooms differentiate from steam showers mostly because the latter provide the user with both options, the use as a regular shower and the use as a steam room. Steam showers are mostly used in residential settings, while steam rooms are often larger in size, and used in commercial settings and thus used for longer periods of time. In this manual, we will refer to both applications as steam rooms. In fact, wedi applies the same installation and performance requirements to both applications to keep your installation safe under all circumstances. The same recommendations apply to residential and commercial use steam rooms, large and small in size. Naturally, we will base this manual on the assumption that tile will be used as the interior surface finish, installed over tile underlayment systems provided by wedi.

A steam room construction consists of a sloped floor structure with drainage (slope 1/4 in. [6.4 mm] / foot), tile load bearing wall structures, a tile load bearing ceiling structure (sloped toward wall(s) at 2 in. [50.8 mm]/ foot), and typically seats or bench arrangements (seating area sloped in a forward direction 1/8 in. [3.2 mm]/ foot) . While their general design reflects that of a shower in many ways, steam rooms require a completely sealed room design including the added ceiling and a sealed door and door frame arrangement. In addition to water exposure, steam rooms must be able to handle and manage water vapor and high temperature and temperature change exposure. Structural walls, ceilings, benches can be constructed from wood or metal framing or may be solid brick, concrete or cinder block. Wall and ceiling structures shall be continuously insulated even though they may entirely be interior structures with no walls being part an exterior structural wall of the building. In some areas of types of buildings, part of the wall and ceiling structures may need to be clad with fire rated panels such as fire resistance rated cement board if on inside of a framed wall, or drywall if on safely dry exterior parts of same wall or ceiling setting. Sprinklers may also be required especially in Type I and II building commercial or occupational use buildings.

Structural subfloors may be made of concrete, screed or wood based. Door frames should be made from aluminum or stainless steel 316 when a frame is used. Glass doors shall be at minimum 3/8 in. (10 mm) thick reinforced safety glass and shall not be equipped with a lock and always open to the outside. Where no frame is used to tightly seal the door construction which allows for a tight seal of the glass door when closed, meticulous attention must be paid to install alternative systems in equally tight fashion. This can prove to be a challenge, as most non door frame systems are designed for use in showers and water vapor may easily escape which must not be allowed to happen. Generally, it is a good practice, however, to leave an open gap (1 in. [25.4 mm]) between floor surface and bottom of the glass door to guarantee access for fresh air and oxygen at all times. All wall, ceiling, bench, floor and other structures to be finished with tile or other surface finishes require the placement of tile or other finish underlayments on the structure's interior side.

The underlayments must be appropriate for attachment to the substructures, and also must be appropriate as a bond surface for the tile and environment it is placed into - such as wedi Building Panel. Equipment for steam rooms include a steam generator, closely located to the unit. It will produce the water vapor, which is forced into the room through an insulated copper pipe led through the wall in an area no less but also no higher than 12 in. (304.8 mm) of the steam room floor. The copper pipe should be as short and as straight as possible for optimal performance. Condensation may collect in pipe elbows or angles. Where the copper pipe penetrates the wedi wall panel, it must still be insulated to not melt the wedi foam core. Appropriate insulation tape should be heat resistant. The vapor inlet should be equipped with a shield making direct contact between users and the ca. 200° Fahrenheit hot water vapor impossible. The inlets should not be located in areas where users move or sit. The inlet should not point the vapor directly against tile and grout surfaces.

Limitations, Structural Design, Construction, Building Materials, Technical Equipment- Before Surface Finish Installation Continued

Elaborate shower equipment and plumbing installation may be present, and at least a handheld shower or a hose connection should be considered to clean surfaces in commercial use steam rooms more efficiently. Lighting must be sufficient and guarantee safety of the users in a foggy space. Lighting may consist of LED or low voltage lights, chroma-therapy lighting systems or fiber optic lighting sticking out from the ceiling where the fiber strings are bundled on top of the ceiling and connected to a light source. Audio entertainment and speaker systems may be present, as well as equipment for aromatherapy. Heating systems, when used in steam rooms, should be hydronic systems. Caution must be applied before deciding to heat surfaces. This extra heat may interfere with temperature guided steam generator operation. In addition, when a steam room is operating at constant and high temperature levels, the water vapor will likely be less visible than would be desired.

To see vapor fog, the water vapor must meet air cool enough to bring the water vapor close to its dew point (which fluctuates with density of vapor molecules in air). Cooler air is usually more prevalent in the lower areas of the steam room. Generally, all equipment used in steam rooms must be chosen based on their suitability for steam room use. Electric equipment and fixtures must be rated for submerged use and carry an IP 67 class rating. Lighting may produce heat and such heat should always be projected away from structures. Caution is necessary when working with lighting commonly used in pools. These are often cooled by the pool water which does not occur in steam rooms. All metal based equipment and fixtures should be corrosion resistant on the level of stainless steel 316. Please ensure the manufacturer of all materials and equipment specifically approves the installation and use in a steam room environment and is able to advise a safe and water and water vapor tight installation process.

To learn more about the limitation, structural design, construction, building materials, and technical properties of wedi Vapor 85 Building Panels, please click the link below to view our:
[Steam Room & Showers Technical Report](#)

Installation on various surfaces (walls, ceilings, structural wooden surfaces and concrete/cement base surfaces - flooring)

To view installation on various surfaces, [click here](#).

Requirements/Limitations for wedi products used in Shower and Wet Room applications

To view general limitations, view our Requirements/Limitations section of our technical handbook [here](#) and as it may apply to wedi Vapor 85.

Packaging and sales

To view product sizes, [click here](#) and choose whether you would like to view wedi Building Panels or Vapor 85 Panels. Once a product type is chosen, scroll down to 'Product Sizes' to view detailed information for each variation of product.

Storage & Handling

Consult Safety Data Sheet SDS (if available) for safe handling of product

Store product in original packaging on a flat and solid surface and do not store other product or material on wedi product.

Ensure product is protected against traffic and exposure to moving objects to avoid damage to the product.

Protect product during storage in warehouse or on project sites and when in transit against weather and keep at all times in a dry and cool environment (between 41°F to 95°F (5°C to 35°C)) and where product is protected against direct exposure to UV/sunlight.

Warranty

To view our information regarding our general and PRO system warranties, or to submit your PRO warranty registration form, [click here](#).

A copy of wedi's 10, 15 and 20-year system warranty information can be downloaded by clicking on the button at the top of the page:

[Download Warranty](#).

Training, Installation Resources and Technical Support

To view our training and workshop schedule, [click here](#).

To download our digital technical handbook, [click here](#).

To get in touch with your local technical sales support manager, [click here](#) and select your state to be provided with contact information. Or, scroll down and fill out the contact form to send a message directly to your local technical sales support manager!

Architectural Support

- Virtual and in-person AIA Presentations for CEU's
- Specification assistance, technical drawings and more
- For more information, email: architecture@wedincorp.com