

CHEMISTRY THAT MATTERS™



LEXAN™ CLINIWALL™ PLUS SHEET

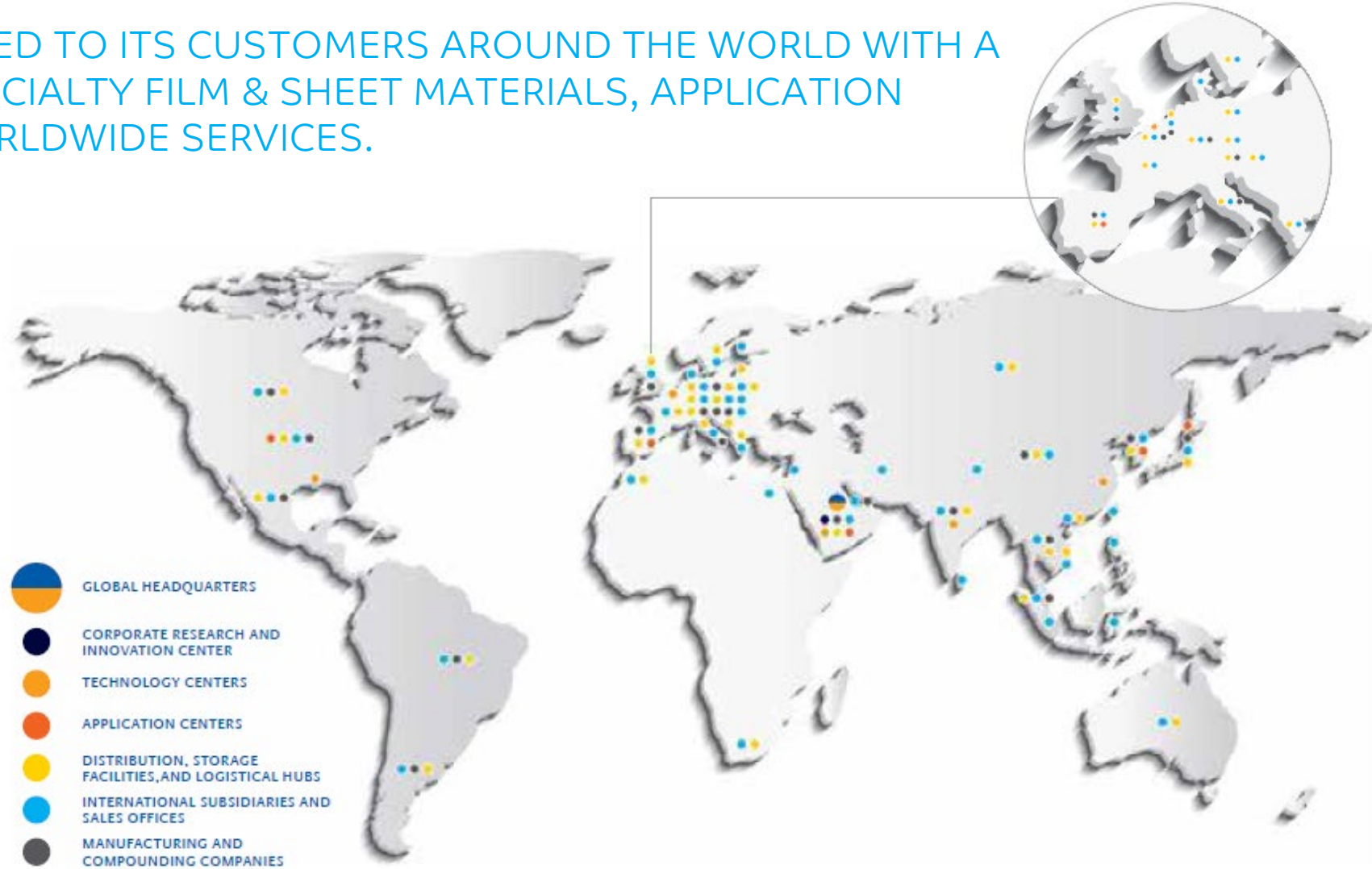
CUSTOMER TRAINING PACKAGE

Peter van den Bleek
Bergen op Zoom, April 2020



SABIC INTRODUCTION

SABIC IS COMMITTED TO ITS CUSTOMERS AROUND THE WORLD WITH A PORTFOLIO OF SPECIALTY FILM & SHEET MATERIALS, APPLICATION SUPPORT AND WORLDWIDE SERVICES.





LEXAN™ CLINIWALL™ PLUS SHEET
wall cladding solutions for hygienic surfaces



LEXAN™ CLINIWALL™ sheet is a non-chlorinated
and non-brominated opaque sheet

TYPICAL APPLICATIONS

PUBLIC FACILITIES

- Schools
- Kindergardens
- Restrooms
- Airports
- Bus stops and train stations
- Sports centers



HEALTHCARE FACILITIES

- Hospitals
- Clinics
- Homes for the elderly
- Primary care centers
- Sterile rooms
- Laboratories



INDUSTRIAL FACILITIES

- Clean rooms
- Pharmaceutical factories
- Industrial kitchens
- Storage/refrigeration rooms
- Storage areas
- Refrigeration facilities



MAIN CHALLENGES

- > **HUMAN HEALTH AND ENVIRONMENTAL PROTECTION**
Antibiotic-resistant organisms such as Methicillin-resistant Staphylococcus Aureus (MRSA) or infectious agents that form spores has intensified interest in cleaning and disinfection in healthcare facilities
- > **EASY MAINTENANCE & EFFICIENCY**
Operational cost efficiency
- > **COMFORT & AESTHETICS**
A healthy and aesthetically pleasing space with clean surfaces is comforting to patients and their families by giving an impression of good quality care without additional health hazards comfort level and experience.
- > **DURABILITY**
Designing and implementing healthier and environmentally friendlier cleaning strategies
- > **EASY INSTALLATION**
Restrained cost



CHALLENGES THAT YOU CONFRONT

AS A DESIGNER, OR A MANAGER IN MATERIAL MANAGEMENT OR MAINTAINANCE AT THE HOSPITAL OR PUBLIC FACILITY, YOU ARE LIKELY FOCUSED ON...

> INFECTION PREVENTION AND CONTROL

Regulatory and hygienic standards
Need for materials that can be anti-Bacterial and certified

> COMFORT & AESTHETICS

Materials can be thermoformed or shaped according to building design

> DURABILITY, EASE OF SURFACE CLEANING & MAINTENANCE

Materials that offer:

- Impact-, scratch- and wear-resistance
- Resistance to moisture
- No corrosion, decomposing or delamination

> EASE OF INSTALLATION

Easy to install materials or suitable for implementing for the existing building and need a minimum maintenance



LEXAN™ CLINIWALL™ PLUS sheet



ENVIRONMENT

- non-chlorinated and non-brominated opaque sheet



HIGH IMPACT STRENGTH AND SCRATCH RESISTANCE

- virtually unbreakable and resistant to abrasion



ANTI-BACTERIAL PROPERTIES

- for specific grades



EASY TO FORM AND INSTALL

- even for existing buildings



EXCELLENT RESISTANCE

- to chemicals, including stain of blood and urine



FIRE SAFETY AND EXCELLENT SMOKE PERFORMANCE

- B-s1-d0 rating according to European EN 13501-1 standard



EASY TO CLEAN AND DISINFECT

- withstands repeated cleaning with common hospital cleaning agents



DURABILITY

- 10 year written limited warranty

WALL CLADDING SOLUTIONS FOR HYGIENIC SURFACES FOR HOSPITALS & PUBLIC FACILITIES

USP's LEXAN™ CLINIWALL™ PLUS sheet



EASY OF INSTALLATION

On site with conventional tools, saving installation time and cost



ANTI-Bacterial - SPECIFIC GRADES

Easy to clean and disinfect



COMFORT & AESTHETICS

Materials can be thermoformed or shaped according to building design



FIRE SAFETY

Complies with fire standard EN 13501-1 and fire reaction classification B-S-1d0



HIGH IMPACT & SCRATCH RESISTANCE

virtually unbreakable

USP OF LEXAN™ CLINIWALL™ PLUS SHEET – FIRE RATING

LEXAN™ CLINIWALL™ PLUS SHEET passes EN 13501 with B-S1-D0

For most countries B-S1-D0 is a mandatory requirement for rooms holding more than 20 people and emergency escape routes within buildings



AFITI LICOF Centro de Ensayos e Investigación del Fuego
Asociación para el Fomento de la Investigación y la Tecnología de la Seguridad contra Incendios

Certificado de ensayo
Nº: C3720T19

| | |
|--|--|
| Solicitante | SABIC INNOVATIVE PLASTICS, BV Plasticslaan, 1 4612 – PX BERGEN OP ZOOM (The Netherlands) |
| Tipo de muestra | Termoplástico libre de halógenos Fabricante: Sabic Innovative Plastics, BV |
| Ensayo/s | <ul style="list-style-type: none"> - Ensayo según norma UNE-EN 13823:2012+A1:2016, "Ensayos de reacción al fuego de productos de construcción-Productos de construcción excluyendo revestimientos de suelos expuestos al ataque térmico provocado por un único objeto ardiendo" - Ensayo según norma UNE-EN ISO 11925-2:2011 "Ensayos de Reacción al Fuego de los materiales de construcción. Inflamabilidad de los productos de construcción cuando se someten a la acción directa de la llama. Parte 2: Ensayo con una fuente de llama única (ISO 11925-2)". |
| Fecha Ensayo/s | 27-feb-19 , 16-may-19 y 23-may-19 |
| Certificado de los informes | Informe de ensayo nº 3720T19 (emitido por AFITI-LICOF en fecha 04-jul-19). Informe de clasificación nº 3720T19-2 (emitido por AFITI-LICOF en fecha 04-jul-19). |
| Clasificación de la Reacción al Fuego | B-s1,d0 |

LEXAN CLINIWALL PLUS C6206

LEXAN™ CLINIWALL™ PLUS SHEET ANTI-BACTERIAL

E Coli bacteria

What is it?

E. coli is a bacterium commonly found in the gut of warm-blooded organisms. Most strains of E. coli are not harmful but are part of the healthful bacterial flora in the human gut. However, some types can cause illness in humans, including diarrhea, abdominal pain, fever, and sometimes vomiting

How do you get contaminated?

Most commonly, E. coli comes from eating raw or undercooked ground beef (for example, hamburger) or from drinking raw milk. The bacteria are found in animal feces, particularly cattle feces, and contact with the feces can lead to contamination of many types of food and fluids

MSRA bacteria

What is it?

Methicillin-resistant Staphylococcus aureus (MRSA) is a bacterium that causes infections in different parts of the body. It's tougher to treat than most strains of staphylococcus aureus -- or staph -- because it's resistant to some commonly used antibiotics. The symptoms of MRSA depend on where you're infected

How do you get contaminated?

MRSA is spread by contact. So, you could get MRSA by touching another person who has it on the skin. Or you could get it by touching objects that have the bacteria on them

LEXAN™ CLINIWALL™ PLUS SHEET ANTI-BACTERIAL

Results - E. coli tested at 35°C

| Sample | | Number of live organisms (Colony Forming Units) | | % reduction of Colony Forming Units expressed as comparison with control | |
|---------|---------------------------------------|---|----------|--|-----------|
| | | 0 hours | 24 hours | | |
| Control | Untreated polyethylene film | 100000 | 12000000 | N/A | |
| 52087 A | Grade: AC6206 Colour: BL8G009 (Blue) | 100000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52087 B | Grade: AC6206 Colour: BL8G009 (Blue) | 100000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52087 C | Grade: AC6206 Colour: BL8G009 (Blue) | 100000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52088 A | Grade: AC6206 Colour: GY8G179 (Cream) | 100000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52088 B | Grade: AC6206 Colour: GY8G179 (Cream) | 100000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52088 C | Grade: AC6206 Colour: GY8G179 (Cream) | 100000 | <10 | > 99.99991% Reduction | EXCELLENT |

Results - MRSA tested at 35°C

| Sample | | Number of live organisms (Colony Forming Units) | | % reduction of Colony Forming Units expressed as comparison with control | |
|---------|---------------------------------------|---|----------|--|-----------|
| | | 0 hours | 24 hours | | |
| Control | Untreated polyethylene film | 110000 | 12000000 | N/A | |
| 52087 A | Grade: AC6206 Colour: BL8G009 (Blue) | 110000 | 330 | > 99.97% Reduction | VERY GOOD |
| 52087 B | Grade: AC6206 Colour: BL8G009 (Blue) | 110000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52087 C | Grade: AC6206 Colour: BL8G009 (Blue) | 110000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52088 A | Grade: AC6206 Colour: GY8G179 (Cream) | 110000 | <10 | > 99.99991% Reduction | EXCELLENT |
| 52088 B | Grade: AC6206 Colour: GY8G179 (Cream) | 110000 | 490 | > 99.95% Reduction | VERY GOOD |
| 52088 C | Grade: AC6206 Colour: GY8G179 (Cream) | 110000 | 170 | > 99.98% Reduction | VERY GOOD |

Once the additive is incorporated in our sheets is essentially there to stay. Based on supplier information it is assumed that the anti-bacterial effect is unaffected by abrasion, scratches, alcohol cleaners and most other disinfectants.

During production each first sheet, middle of production (or every 2hrs) and last sheet will be sampled. These samples will be send to outside test laboratory and test report will be send to the customer. Passing the Anti-Bacterial test is a QA release parameter.

- > 99.9% of MRSA bacteria reduction within 24 hours
- >99.999% of E-coli bacteria reduction within 24 hours

CLEANING TEST OVERVIEW

| Elongation @23°C | <ul style="list-style-type: none"> • ≥80% Retention ! 60 - 80% Retention X ≤60% Retention | | |
|--------------------------|--|-------------|-----------|
| | 0% | 0.5% | 1% |
| STRAIN | 0% | 0.5% | 1% |
| No chemical | STD | • | • |
| Sodium hydroxide 10% | • | ! | X |
| Neutral Soap | • | • | • |
| Acetone | X | X | X |
| Sodium sulphate 10% | • | • | • |
| Bleach | • | • | • |
| Phosphoric acid 30% | • | • | • |
| Nitric acid 10% | • | • | • |
| Hydrochloric acid 20% | • | • | • |
| Citric acid 10% | • | • | • |
| Acetic acid 10% | • | • | • |
| Hydrogen Peroxide 30% | • | • | • |
| Ammonium Chloride 10% ** | • | • | ! |
| Formaldehyde 1% | • | • | • |
| Ethanol 99.8% | • | • | • |

LEXAN CLINIWALL PLUS is tested for its chemical resistance towards common hospital cleaning agents. LEXAN CLINIWALL PLUS sheet test samples were evaluated under different strain levels at 23°C for one week. After 7 days the appearance was checked and tensile properties are measured. Test results showed that, except for acetone, nearly all substances (see Table for the list of referred cleaning substances) are compatible with the LEXAN CLINIWALL PLUS Sheet.

Please note, depending on the cleaning agent, repeated cleaning may have an effect on the mechanical performance of the sheet product.

COMPARISON LEXAN™ CLINIWALL™ PLUS SHEET VS. OTHER MATERIALS

| PROPERTY | LEXAN™ CLINIWALL SHEET (POLYCARBONATE) | HPL (HIGH PRESSURE LAMINATES) | PVC (POLYVINYL CHLORIDE) | CERAMICS |
|--|---|-------------------------------------|-----------------------------|----------|
| PROVES B-s1-d0 FIRE RATING | ✓ | ✗ | m1 | n.a. |
| HIGH HARDNESS AND MECHANICAL STRENGTH | ✓ | ✓ | ✓ | ✗ |
| EASY TO CLEAN | ✓ | ✓ | ✓ | ✗ |
| HYGIENIC GUARANTEES (ANTI- Bacterial) | ✓ | ✗ | ✗ | ✗ |
| RESTRAINED COST | ✓ | ✗ | ✓ | ✗ |
| DURABILITY | ✓ | ✓ | ✓ | ✓ |
| AESTHETICS AND FUNCTIONALITY | ✓ | ✓ | ✓ | ✓ |
| MINIMUM MAINTENANCE | ✓ | ✗ | ✓ | ✗ |

PRODUCT AVAILABILITY

TEXTURES

Polished/Suede

product code - LEXAN CLINIWALL (A)C6206 sheet

Polished/Silk Matte

product code LEXAN CLINIWALL (A)C6205 sheet
on request with protective masking

COLORS

| COLOR | COLOR CODE |
|------------------|------------|
| White | WH6G057 |
| Beige | BR8G038 |
| Light grey/beige | GY8G179 |
| Mint green | GN6G033 |
| Light blue | BL8G009 |
| Dark blue | BL1G038 |
| Dark grey | GY1G140 |
| Light grey | GY7G160 |
| Off white | 86183 |



All other colors are available on request.

STANDARD DIMENSIONS

Grade (A)C6205: Gauges 1.2 and 1.5 mm, W – L =1300 – 3050mm

Grade (A)C6206: Gauges 1.5 and 1.7 mm, W – L =1300 – 3050mm

CLEAN ROOM APPLICATION (C6205 ONLY)

DEFINITION of a CLEAN ROOM - where the concentration of airborne particles is controlled according to specific needs such as temperature, humidity, dust and pressure.

REQUIREMENTS are defined according to segments:

- > PHARMACEUTICAL INDUSTRY
- > HEALTHCARE
- > COSMETICS
- > FOOD INDUSTRY
- > CHEMICAL
- > BIOSAFETY
- > ELECTRONICS
- > OPTICAL



CLEAN ROOM – REQUIREMENTS (C6205 only)

- SMOOTH AND FLUSH SURFACES – texture 5 with protective masking
- HIGH HARDNESS AND MECHANICAL STRENGTH
- EASY TO CLEAN / CHEMICAL RESISTANCE
- HYGIENIC GUARANTEES
- B-s1-d0 FIRE RATING
- RESTRAINED COST – at sheet thickness 1.0 - 1.5 mm
- THERMAL INSULATION
- ANTISTATIC
- ANTI-Bacterial



CLEAN ROOM – CONSTRUCTION (C6205 only)

MATERIALS USED

SKIN:

- HIGH PRESSURE LAMINATES (3 MM)
- METAL PLATES
- STAINLESS STEEL
- PVC

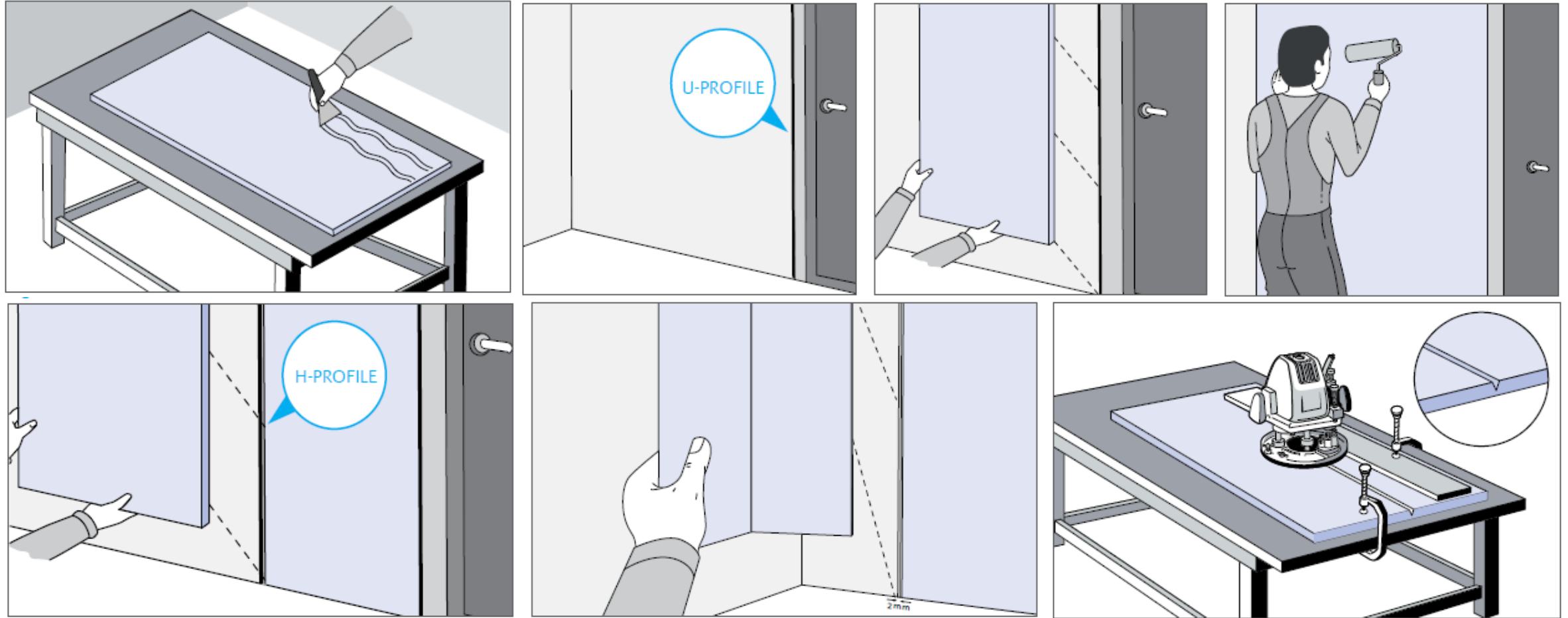
CORE:

- POLYSTYRENE
- POLYURETHANE
- MINERAL WOOL
- ALUMINIUM HONEYCOMB



➤ LEXAN™ CLINIWALL™ PLUS SHEET REPLACES POSSIBLE SKINS MATERIALS AND OFFERS SIGNIFICANT MATERIAL COST SAVINGS

INSTALLATION



SCREEN SHOT's BROCHURE/TECHNICAL MANUAL

INSTALLATION VIDEO

GETL_LEXAN_CLINIWALL_Sheet_-_Installation_Video

<https://www.youtube.com/watch?v=qg7jf4MWwV0>



00:00 **START**



THANK YOU

