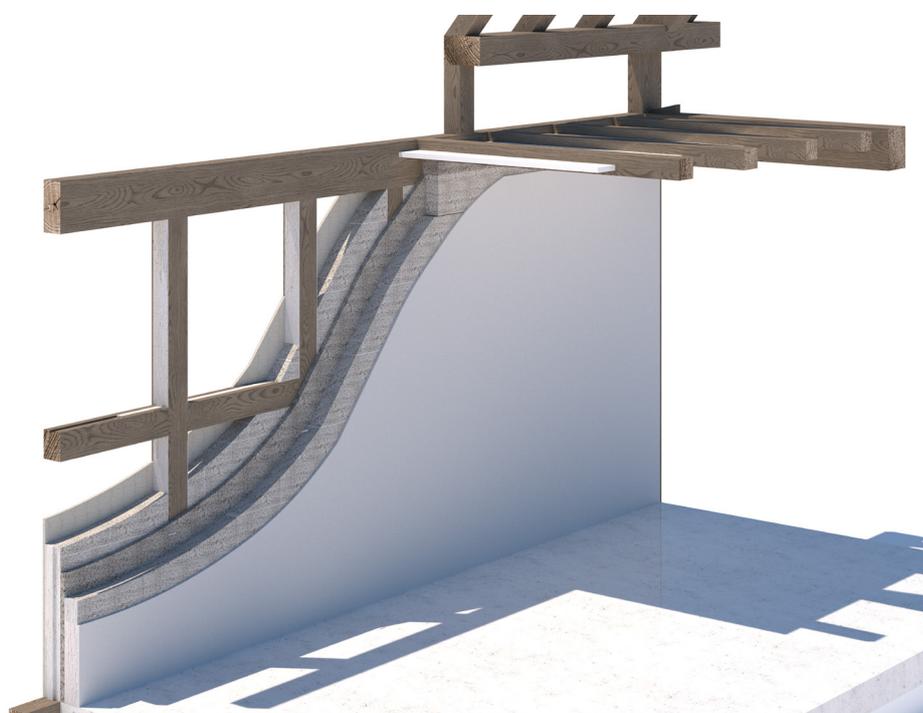


EXISTING TIMBER FRAME

INFILLED AND INSULATED WITH PREFABRICATED
HEMPCRETE BLOCKS

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LEGEND



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BIOBASED

EVERYTHING THAT GROWS ABSORBS CO₂ IN ITS GROWTH. THEREFORE, BUILDING MATERIALS MADE FROM RAPIDLY RENEWABLE RESOURCES ARE THE WAY FORWARD IF YOU WANT TO REDUCE THE CO₂ FOOTPRINT IN THE CONSTRUCTION INDUSTRY.



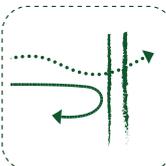
VAPOUR OPEN

ALL LIVING THINGS NEED TO BE ABLE TO BREATHE, AND THE SAME APPLIES TO THE BUILDINGS WE HAVE TO STAY IN. SO A BUILDING SHOULD BE ABLE TO BREATHE.



HEALTHY INDOOR CLIMATE

PEOPLE NOWADAYS SPEND UP TO 90% OF THEIR TIME INDOORS. THEREFORE, THE MATERIALS IN OUR BUILDINGS MUSTN'T EMIT DANGEROUS CHEMICALS.



AIRTIGHTNESS

AIR LEAKAGE OFTEN CAUSES PROBLEMS, AND MANY BUILDINGS SUFFER SIGNIFICANT HEAT LOSS. AIR LEAKAGE CAN BE IDENTIFIED AS AN UNPLEASANT AIR MOVEMENT THROUGH THE BUILDING ASSEMBLY OR THERMAL ENVELOPE. THE CLEAR BENEFITS OF IMPROVING BUILDINGS' AIRTIGHTNESS ARE REDUCING ENERGY USAGE AND IMPROVING THERMAL COMFORT. USING OUR PRODUCTS WILL IMPROVE THE AIRTIGHTNESS OF THE BUILDING WITHOUT COMPROMISING ON THE VAPOUR OPENNESS.



FLOOR BUILD-UP



ROOF BUILD-UP



WALL BUILD-UP

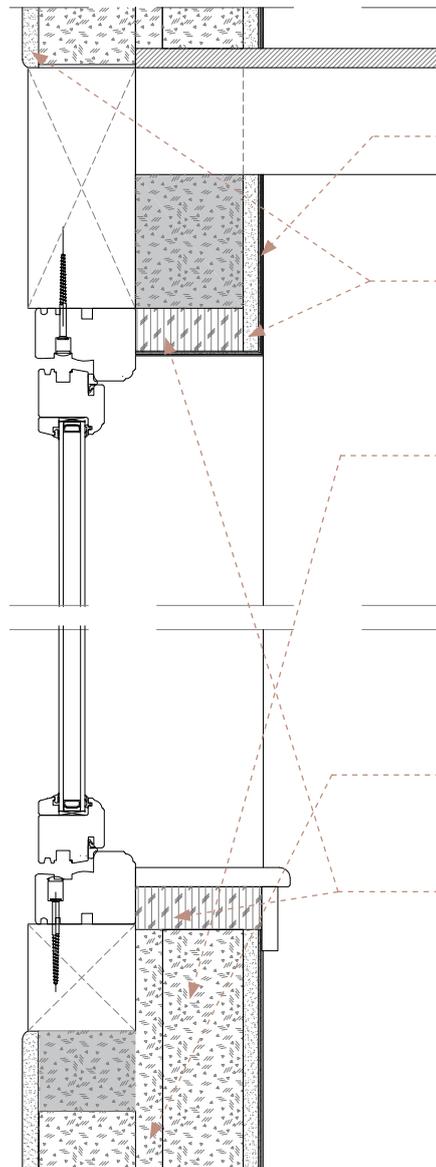


EXISTING TIMBER FRAME
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LIST OF MATERIALS AND THEIR BRIEF DESCRIPTIONS



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LIME- OR CLAY-BASED PAINT

VAPOUR-OPEN SURFACE FINISH
IN VARIABLE COLOURS

LIME- OR CLAY-BASED PLASTER AND RENDER

VAPOUR-OPEN PASTY COMPOSITION THAT
HARDENS ON DRYING, APPLIED IN VARIOUS
THICKNESSES. IT CAN ACT AS AN AIRTIGHT LAYER

ISOHEMP BLOCK

HEMP LIME COMPOSITE NON-LOAD BEARING
MASONRY BLOCK WORK

ISOHEMP MORTAR

LIME-BASED ADHESIVE MORTAR TO CREATE SOLID
JOINTS BETWEEN THE ISOHEMP BLOCKS

EXIE DRY MIX GRANULATE

HEMP LIME COMPOSITE READY-TO-USE DRY MIX TO
INFILL THE CAVITY BETWEEN THE INNER AND
OUTER LAYERS OF HEMPCRETE BLOCKS

DIASEN DIATHONITE THERMACTIVE 0.037

INSULATING LIME- AND CORK-BASED PLASTER FOR
IMPROVING THERMAL PERFORMANCE

FOR MORE DETAIL, PLEASE VISIT OUR WEBSITE.

EXISTING TIMBER FRAME
INFILLED AND INSULATED WITH PREFABRICATED HEMPCRETE BLOCKS

TABLE OF MATERIAL PROPERTIES

	ISOHEMP BLOCK	ISOHEMP ADHESIVE MORTAR	EXIE DRY MIX GRANULATE	DIASEN DIATHONITE THERMACTIVE 0.037	AMORIM CORK INSULATION	LIME OR CLAY-BASED PLASTER	LIME OR CLAY-BASED PAINT
CERTIFICATE	  			  	  		
FIRE CLASS	B, S1, DO			CLASS A1	EURO-CLASS E		
ACOUSTIC	$\alpha = 0.85$ (ABSORPTION COEFFICIENT)						
DIMENSIONS	600X90X-300MM/ BLOCK AND 600X75X-300MM	25 KG/BAG	1M3/80L	15 KG/BAG			
COMPRESSIVE STRENGTH	0,22 MPA				CS(10)100		
DRYING/CURING TIME		36 HOURS	1 HOUR	2 MM/DAY	NR		
SHELF LIFE AFTER MIXING		1 HOUR AFTER MIXING WITH WATER, 6 MONTHS AFTER OPENING THE BAG IN DRY CONDITION	12 MONTH AFTER PRODUCTION	40 MINUTES AFTER MIXING WITH WATER, 12 MONTHS AFTER OPENING THE BAG IN DRY CONDITION	NR		



TABLE OF MATERIAL PROPERTIES

	ISOHEMP BLOCK	ISOHEMP ADHESIVE MORTAR	EXIE DRY MIX GRANULATE	DIASEN DIATHONITE THERMACTIVE 0.037	AMORIM CORK INSULATION	LIME OR CLAY-BASED PLASTER	LIME OR CLAY-BASED PAINT
CONTENT OF INGREDIENTS	HEMP SHIV, HYDRAULIC AND HYDRATED LIME, WATER		HEMP SHIV, HYDRATED LIME, EXIE ADDITIVE, WATER	NHL5, CORK, PUMICE, AMORPHOUS EXPANDED SILICATE, PERLITE, NATURAL FIBRES AND DIATOMACEOUS EARTH	CORK		
TEMPERATURE DURING INSTALLATION	-	5 °C TO 35 °C		5 °C TO 35 °C	NR		
WATER VAPOUR PERMEABILITY	$S_d = 0.25 \text{ M}$ (90MM BLOCK)			$\mu = 3$	$\mu = 20$		
THERMAL CONDUCTIVITY	0.071W/MK		0.06W/MK	0.037 W/MK	0.039 W/MK		



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WHY DO WE ADVISE USING THE SYSTEM ABOVE?

LIME- OR CLAY-BASED PAINT AND LIME- OR CLAY-BASED PLASTERS

THEIR CARBON FOOTPRINT IS LESS THAN ANY CONVENTIONAL FINISHING BUILDING MATERIALS. LIME HAS A BIGGER CARBON FOOTPRINT THAN CLAY BUT IS SMALLER THAN CEMENT.

IF YOUR GOAL IS MINIMISING THE CARBON FOOTPRINT, THEN CLAY-BASED PRODUCTS ARE THE BEST OPTION.

LIME- AND CLAY-BASED PAINTS ARE BREATHABLE (VAPOUR-PERMEABLE), ALLOWING MOISTURE TO “TRAVEL” THROUGH THE MATERIAL. THIS MEANS THERE IS NO TRAPPED MOISTURE BUILDING UP ON THE SURFACES.

CLAY OR LIME-BASED PLASTERS CAN HELP BALANCE INDOOR HUMIDITY BECAUSE THEY HAVE THE SO-CALLED “HYGRIC MASS”.

IT CAN IMPROVE THE AIRTIGHTNESS OF THE BUILD-UP WITH THE RIGHT APPLICATION AND THICKNESS.

ISOHEMP BLOCK SYSTEM

ISOHEMP BLOCKS ARE MADE FROM THE HEMP-LIME BIO-COMPOSITE MIX, WHICH IS 100% BIOBASED AND ALSO HAS AN A1-A3 NEGATIVE CARBON FOOTPRINT.

THE ISOHEMP BLOCKS HAVE A FIRE RATING OF B,S1,DO WITHOUT APPLYING ANY FINISHES, SO THEIR CONTRIBUTION TO FIRE AND SMOKE IS VERY LIMITED AND DOES NOT PRODUCE FLAMING DROPLETS AT ALL.

DUE TO THE APPLICATION OF ISOHEMP LIME-BASED ADHESIVE MORTAR, THE DISTANCE BETWEEN BLOCKS IS MINIMISED TO A MAXIMUM OF 3MM; THEREFORE, THE LINEAR THERMAL BRIDGING IS MINIMAL.

HEMPCRETE IS OFTEN UNDERVALUED DUE TO ITS LAMBDA VALUE, AND ALSO ITS HYDROTHERMAL QUALITIES (HOW MOISTURE, AIR AND HEAT MOVE THROUGH THE MATERIAL) ARE OVERLOOKED. HEMP LIME COMPOSITE IS NOT JUST PURELY AN INSULATION BUT ALSO A THERMAL MASS AND REGULATOR OF INTERNAL HUMIDITY.

OWING TO ITS DENSITY (SEMI-LIGHTWEIGHT MATERIAL), IT ABSORBS NOISE WELL.

SINCE THE ISOHEMP BLOCKS ARE LIGHT, IT'S EASY TO LAY THEM. CUTTING THE BLOCKS WITH AN ALLIGATOR SAW IS ALSO REASONABLY QUICK.

THESE BLOCKS ARE NOT LOAD-BEARING.

EXIE HEMP-LIME DRY READY-TO-USE GRANULATE

AS WITH OTHER HEMP-LIME COMPOSITE PRODUCTS, THE EXIE GRANULATE IS FIRE-RESISTANT AND VAPOUR PERMEABLE. BUT CONTRARY TO THE ON-SITE HEMPCRETE MIXES, THIS PRODUCT IS INSTALLED AS A DRY INFILL - SINCE IT IS MIXED AND DRIED IN A FACTORY ENVIRONMENT - IT ARRIVES AT THE SITE IN BULK, READY TO USE CONDITION, SO NO WATER IS ADDED, AND NO WAITING FOR THE DRYING, FINISHING LAYER CAN BE APPLIED NEXT DAY.

DIASEN DIATHONITE THERMACTIVE 0.037

THE MAIN COMPONENTS ARE LIME, CORK, PUMICE, AMORPHOUS EXPANDED SILICATE, PERLITE, NATURAL FIBRES AND DIATOMACEOUS EARTH. THESE ARE ALL BIO-COMPOSITE MATERIALS AND WILL SMOOTHLY WORK WITH HISTORIC OR LISTED BUILDINGS AND ALSO CONTRIBUTE TO LEED CREDITS.

THERMACTIVE DRIES AT THE SPEED OF 2MM PER DAY.

DIATHONITE THERMACTIVE 0.037 IS FLEXIBLE IN APPLICATION. IT ALLOWS THE CONSTRUCTION OF CURVED EDGES THAT FIT HISTORIC PROPERTIES BUT ALSO ALLOWS A MORE MODERN STYLE FINISHED RESULT WHEN REQUIRED.

DIATHONITE THERMACTIVE 0.037 IS IDEAL FOR LEVELLING UNEVEN WALLS.

ITS LAMBDA-VALUE IS 0.037W/MK. IT IS ALSO NON-COMBUSTIBLE MATERIAL.

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PPE:

ALL WORKERS SHOULD WEAR PERSONAL PROTECTIVE EQUIPMENT FOR SAFE WORKING WITH LIME-BASED PRODUCTS. ALL LIME-BASED PRODUCTS ARE HIGHLY ALKALINE; THUS, THEY CAN CAUSE BURNS, SO BESIDES THE GENERAL PPEs, THE BEST PRACTICE IS TO WEAR GLOVES (E.G. LATEX OR PVC OR MASONRY), WATERPROOF CLOTHING AND KNEE PADS. WHEN MIXING ANY DRY MATERIALS WITH A PAN-, DRILL- OR HAND, WEARING MASKS IS HIGHLY RECOMMENDED.

STEP NO 1.

PREPARING THE EXISTING TIMBER FRAME

1. REMOVE THE LOOSE INFILL AND CAREFULLY CLEAN THE EXISTING FRAME AS MUCH AS POSSIBLE.
2. CREATING AN APPROXIMATELY 10MM DEEP AND 30MM WIDE]-SHAPED NOTCH WITH A ROUTER POWER TOOL OR A HAND-CARVED V-SHAPE NOTCH (BIRD'S MOUTH/ GEISS FUS) APPROXIMATELY IN THE MIDDLE OF THE EXISTING TIMBER FRAME. THIS NOTCH WILL BE FILLED WITH BRICKLAYER MORTAR-MIX WITH 0.4MM SAND TO CREATE A GOOD ADHESION BETWEEN THE FRAME AND THE BLOCKS.

STEP NO 2.

HEMPCRETE INSTALLATION

ISOHEMP BUILDING BLOCKS & ISOHEMP LIME-BASED ADHESIVE GLUE-MORTAR (MC)

FIRST ROW:

1. THE BASE COURSES ARE LAID IN 10 TO 20MM UNIFORMLY SPREAD OF LIME MORTAR. IF THERE IS A RISK OF CAPILLARY RISE, THE BLOCKS ARE LAID ON DPM. SET THE BLOCKS WITH A MINIMUM DISTANCE OF 25MM FROM THE EXISTING BRICK WALL.
2. THE BLOCKS ARE MOUNTED WITH ISOHEMP ADHESIVE GLUE-MORTAR (MC) MIXED WITH CLEAN WATER AS INDICATED ON THE BAG. THE ADHESIVE MORTAR'S BEST PERFORMANCE CAN BE ACHIEVED IF THE TEMPERATURE IS BETWEEN 5 AND 30 DEGREES CELSIUS. THE BASE COURSES MUST BE LEVEL.
3. THE VERTICAL JOINT BETWEEN BLOCKS SHOULD NOT BE THICKER THAN 3MM.
4. BEFORE LAYING THE NEXT ROW, THE ADHESIVE MORTAR SHOULD BE DRY BETWEEN THE BLOCKS.

LAYING THE SECOND ROW:

5. BEFORE APPLYING THE MORTAR, THE SURFACE OF THE BLOCKS SHOULD BE PREPARED; LEVELLING THEM WITH A RENDERING GRADER AND REMOVING THE EXCESS DUST IS ESSENTIAL. NEXT, THE MORTAR IS APPLIED TO THE ENTIRE HORIZONTAL SURFACE OF THE LAID BLOCKS. THE THICKNESS OF THE MORTAR SHOULD BE ADJUSTED WITH NOTCHED TROWELS TO A MAXIMUM OF 3MM.
6. TO ACHIEVE THE NECESSARY BOND BETWEEN THE INNER AND OUTER SKIN, ISOHEMP CONNECTOR BRACKETS OR ANY OTHER GALVANISED WALL TIES SHOULD BE PROVIDED WITH EVERY 600MM. (5 HOOKS/M²)
7. FINALLY, LAY THE SECOND ROW IN STAGGERED JOINTS WITH A MINIMUM OF 1/3 OF THE BLOCK'S LENGTH. EXCESS MORTAR IS CONTINUOUSLY REMOVED DURING INSTALLATION BEFORE IT DRIES. WHEN THE BLOCKS ARE INSTALLED, YOU CAN USE A RUBBER HAMMER OR SIMILAR TO ADJUST THEIR POSITION TO LEVEL.
8. REPEAT AS SUGGESTED ABOVE UNTIL THE LAST ROW, FILLING WITH THE HEMPCRETE BLOCKS BETWEEN THE TIMBER FRAME MEMBERS FIRST, THEN LAYING THE INNER LAYER OF HEMPCRETE BLOCKWORK.
9. WE ADVISE FILLING THE GAP BETWEEN THE TWO LAYERS OF HEMPCRETE BLOCKS SIMULTANEOUSLY WITH LAYING EVERY ROW OF HEMPCRETE BLOCKS IN THE INNER SKIN.

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OPENING PERIMETER:

10. INSTALL A WOOD CHIPBOARD OR OSB BOARD AROUND THE WINDOW PERIMETER TO CLOSE THE GAP BETWEEN THE INNER LAYER OF HEMPCRETE BLOCKWORK AND THE EXISTING TIMBER FRAME.
11. THE GAP BETWEEN THE INNER AND OUTER SKIN OF HEMPCRETE BLOCKS SHOULD BE TIGHTLY PACKED WITH EXIE HEMPCRETE INFILL READY-TO-USE DRY GRANULATE. AROUND THE OPENING IN MIN30MM THICKNESS, A WET ON-SITE EXIE-LIME MORTAR MIX SHOULD BE APPLIED TO SECURE THE LOOSE MIX FROM FALLING OUT.
12. LINTEL WILL BE ONLY NECESSARY IF THE CEILING JOISTS ARE FAR ABOVE THE OPENING. IN THE PROVIDED IMAGE, THE TIMBER JOISTS ARE CONNECTED TO THE HORIZONTAL TIMBER MEMBER, WHICH ALSO FUNCTIONS AS THE LINTEL ABOVE THE WINDOW, SO THE SPACE BETWEEN THE CEILING JOIST AND THE BOTTOM OF THE HORIZONTAL TIMBER ELEMENT CAN BE FILLED IN WITH A MIX OF LIME MORTAR AND EXIE GRANULATE. 200MM SUPPORT TO BE PROVIDED BY THE HEMPCRETE MASONRY ON EACH SIDE, THE SAME WAY AS WE PROCEED WITH A REGULAR PREFABRICATED LINTEL.
IF THERE ARE SEVERAL ROWS ABOVE THE OPENING, A LINTEL SHOULD BE INSTALLED.
13. THE WOOD CHIPBOARD/OSB CAN BE REMOVED WHEN THE WET MIX IS DRY/ SOLID.

INSTALLING LINTELS:

14. PROVIDE ON EACH SIDE OF THE HEMP BLOCK MASONRY A MINIMUM OF 200MM SUPPORT. IF THE STRUCTURAL SPAN IS BIGGER THAN 2M, INCREASE THE SUPPORT TO 300MM. THE CONCRETE CENTRE SHOULD ALWAYS FACE UPWARDS.
15. THE LAST ROW OF THE HEMPCRETE BLOCK SHOULD BE OFFSET FROM A MINIMUM OF 20MM BELOW THE CEILING, AND THE SPACE SHOULD BE FILLED WITH A MIX OF LIME MORTAR AND EXIE GRANULATE.



STEP NO. 3.

APPLYING DIASEN DIATHONITE THERMACTIVE .037

ON THE SURFACE OF THE WINDOW REVEALS

1. THE SURFACE MUST BE CLEAN AND STABLE. TO PREVENT FUTURE CRACKING, APPLY REINFORCEMENT MESH AROUND THE WINDOW PERIMETER TO CONNECT THE HEMPCRETE AND THE EXISTING TIMBER FRAME.

EXISTING TIMBER FRAME
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2. CREATE REFERENCE POINTS WITH TIMBER BATTEN PROFILES TO MARK UP THE REQUIRED THICKNESS. THE TIMBER BATTENS WILL BE REMOVED RIGHT AFTER THE LAST LAYER IS APPLIED.
3. MIX THE DIATHONITE THERMACTIVE .037 WITH A MIXING DRILL AS INDICATED ON THE BAG, CONSIDERING THE ENVIRONMENTAL CONDITIONS. MIX IT FOR AT MOST 3-4 MINUTES.
4. WITH A MASONRY TROWEL, APPLY A LAYER OF DIATHONITE THERMACTIVE .037, CREATING A THICKNESS THAT CAN REACH UP TO 40MM (15MM-20MM RECOMMENDED BY DIASEN). ABOVE 40MM THICKNESS REINFORCEMENT MESH SHOULD BE ADDED TO EVERY 30MM LAYER. START AT THE BOTTOM OF THE SURFACE, THROWING THE MIXTURE TO THE WALL AND WORK UPWARDS.
5. IF THE DESIRED THICKNESS CAN'T BE REACHED WITH THE FIRST COAT WHEN THE UNDERLYING LAYER IS CONSISTENT TO THE TOUCH AND VISUALLY LIGHTER (AFTER ABOUT 24 HOURS), PROCEED WITH APPLYING ONE OR MORE LAYERS OF DIATHONITE THERMACTIVE .037 UNTIL THE SPECIFIED THICKNESS IS REACHED. IN ANY CASE, KEEP A THICKNESS \leq 40MM FOR EACH APPLIED COAT. DO NOT PACK THE MIXTURE; EACH LAYER SHOULD BE ROUGH AND POROUS.
6. THE LAST LAYER SHOULD BE FLATTENED WITH A TIMBER BATTEN OR STRAIGHTEN METAL EDGE HOLDING IT HORIZONTALLY 90 DEGREES ANGLE TO THE SURFACE AND MOVED UPWARDS WITH A ZIGZAG MOVEMENT.
7. WHILE SMOOTHING THE PLASTER, DO NOT COMPRESS DIATHONITE THERMACTIVE .037 TO PRESERVE THE POROSITY OF THE PRODUCT. INSTEAD, USE AN H-SHAPE TO OBTAIN A SMOOTH SURFACE WITH FLUID HORIZONTAL AND VERTICAL MOVEMENTS.
8. THIS PRODUCT CAN BE APPLIED UNDER THE WINDOW SILL, BUT TO AVOID ANY COMPRESSION - FOR INSTANCE, IN THE CASE OF CREATING A WINDOW SEAT - WE ADVISE USING EXTRUDED CORKBOARD INSULATION INSTEAD.



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STEP NO 4.

INSTALLING ELECTRIC WIRES OR PIPEWORK

1. IT IS RELATIVELY EASY TO CARVE OR GROOVE HEMPCRETE. MAKE SURE THAT ALL MORTAR AND ADHESIVE ARE DRY. FIRSTLY, LOCATE WHERE THE SOCKETS AND SWITCHES WILL BE AND MARK THEM UP ON THE HEMPCRETE BLOCKS.
2. DRILL OR CARVE THE HOLE USING A HOLE SAW OR A HAND CHISEL.
3. CREATE THE CHANNEL FOR THE PIPES/WIRES WITH A GROOVING MACHINE OR A HAND CHISEL.
4. FIT THE SOCKET/SWITCH BOXES TO THE HOLE AND PLACE THE ELECTRICAL CABLE DUCTS IN THE GROOVE.
5. SEAL THE CHANNELS AND HOLES WITH LIME MORTAR OR OTHER SUITABLE VAPOUR-OPEN SEALANTS.
6. THE EXCESS MATERIAL CAN BE COLLECTED AND MIXED WITH A LIME-BASED BINDER AND USED LATER AS AN INFILL FOR CAVITIES.

STEP NO 5.

APPLYING LIME OR CLAY PLASTER.

1. BEFORE APPLYING ANY PLASTER, THE SURFACE SHOULD BE INSPECTED AND PREPARED. THE SURFACE SHOULD BE RELATIVELY CLEAN AND DUST FREE. THE MOISTURE SUCTION OF THE SURFACE SHOULD ALSO BE INVESTIGATED TO AVOID EXCESSIVE SUCTION THAT CAN RESULT IN RAPID DRYING AND WEAK AND POWDERY INTERFACE, AND OVER TIME, SEPARATION FROM THE WALL SURFACE. MISTING OR WETTING DOWN MIGHT BE NECESSARY REGARDING THE WALL SUCTION TEST RESULT. THE SURFACE SHOULD BE DAMP BUT NOT WET.
2. LIME PLASTER SHOULD BE APPLIED IN 2 COATS. THE FIRST COAT IS THE BASE COAT, GIVING A COARSE SURFACE. THE LIME-SAND RATIO IS 5:2, USING 0.2MM SAND IN THE MIXTURE. THE THICKNESS OF THE COAT DEPENDS ON THE SURFACE BUT USUALLY IS BETWEEN 8-12MM. THE TOP COAT MIXING RATIO IS 2:1, USING SILICA OR SILVER SAND FOR A SMOOTHER FINISH. THE THICKNESS IS AROUND 2MM.
3. WITH APPROPRIATE INSTALLATION AND THICKNESS, THE AIRTIGHTNESS OF THE WALL WILL INCREASE.
4. IF YOU WISH TO USE A READY-MIX OPTION - NOT THE ON-SITE MIX DESCRIBED IN 1.-3. WE RECOMMEND USING THE PRODUCT CALLED KALK RØDVIG JURAMØRTEL 35/65/500, EITHER THE 0-2MM OR THE 0-4MM OPTION.

STEP NO 6.

PAINTING

STEP 7.

EXTERNAL FINISH - LIME-BASED RENDER

1. BEFORE APPLYING ANY RENDER, THE SURFACE SHOULD BE INSPECTED AND PREPARED. SINCE THE RENDER COATING IS HEAVIER, THE SURFACE SHOULD BE SCRATCHED FOR AN APPROPRIATE STICKING. THE MOISTURE SUCTION OF THE SURFACE SHOULD ALSO BE INVESTIGATED TO AVOID EXCESSIVE SUCTION THAT CAN RESULT IN RAPID DRYING AND WEAK AND POWDERY INTERFACE, AND OVER TIME, SEPARATION FROM THE WALL SURFACE. MISTING OR WETTING DOWN MIGHT BE NECESSARY REGARDING THE WALL SUCTION TEST RESULT. THE SURFACE SHOULD BE DAMP BUT NOT WET.
2. LIME RENDER SHOULD BE APPLIED IN 2 COATS. THE FIRST COAT IS THE BASE COAT, GIVING A COARSE SURFACE. THE LIME-SAND RATIO IS 5:2, USING 0-4MM SAND IN THE MIXTURE. THE THICKNESS OF THE COAT DEPENDS ON THE SURFACE BUT USUALLY IS BETWEEN 10-12MM. THE TOP COAT MIXING RATIO IS 5:2, USING 0-2MM SAND FOR A SMOOTHER FINISH. THE THICKNESS IS AROUND 4-6MM.