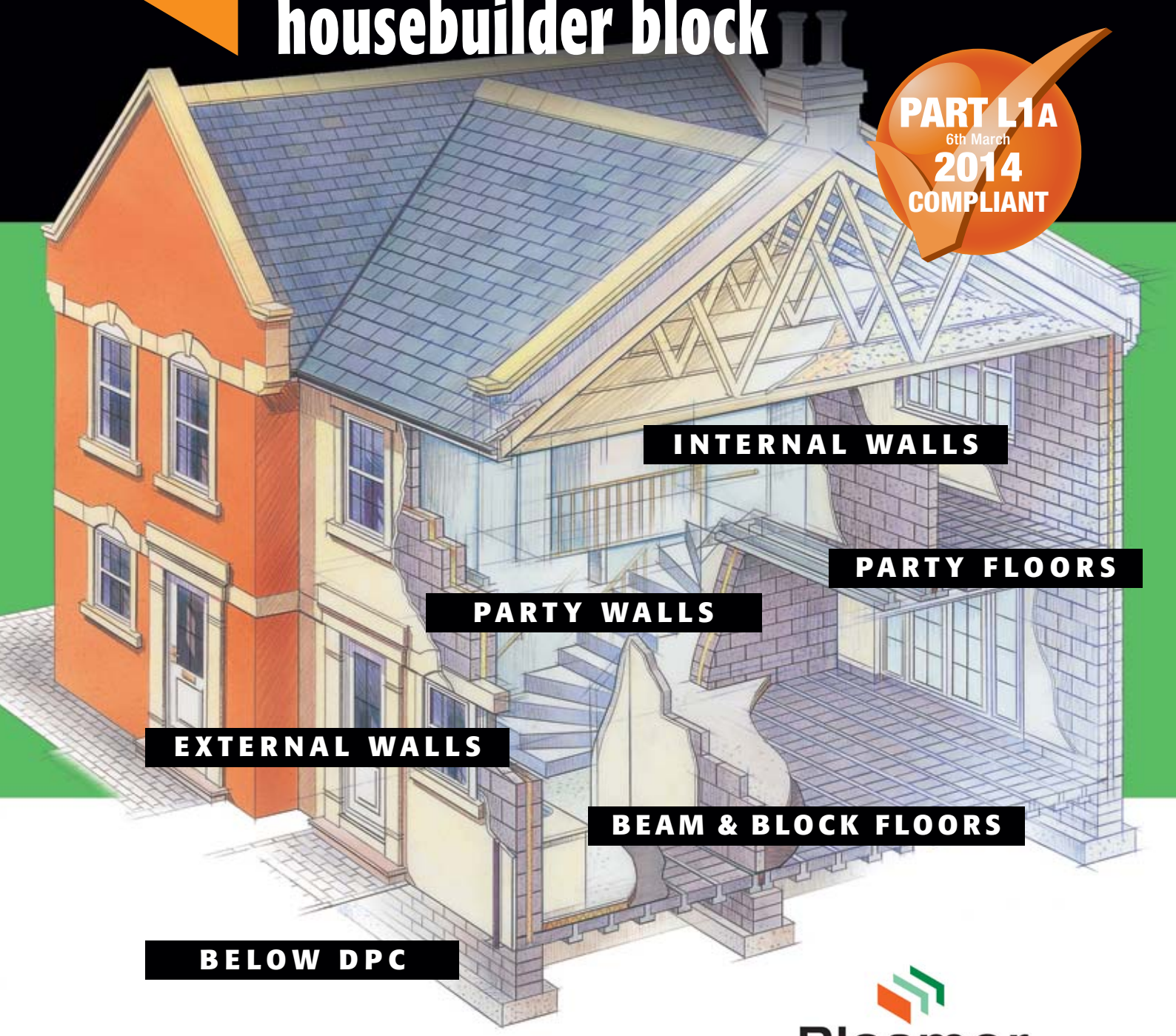
AGLITE Ultima®

THE DEFINITIVE HOUSEBUILDER BLOCK

NEW ROBUST DETAILS
E-WM-17
E-WM-12
E-WM-22
E-FC-4

The new alternative lightweight, sustainable & cost effective housebuilder block

PART L1A
6th March
2014
COMPLIANT



Plasmor
CONCRETE PRODUCTS

PLASMOR introduce a versatile, multipurpose, lightweight,

ONE BLOCK ON SITE HOUSEBUILDER BLOCK

- a cost effective alternative to the standard breeze block

INTRODUCING AGLITE Ultima®

AGLITE ULTIMA complies with all of the prevailing building regulations including the following:-

- Building Regulations Part L1A 2013 *'Conservation of Fuel and Power'*
- Building Regulations Part E 2003 *(2015 updates) 'Resistance to the Passage of Sound'*
- Robust Details E-WM-12, E-WM-17, E-WM-22 and E-FC-4
- Code for Sustainable Homes Credits (HEA 2)

THE DEFINITIVE HOUSEBUILDER BLOCK

Upon publication of the latest revision Part E Robust Details by Robust Details Ltd, Aglite Ultima may now be registered with E-WM-17, E-WM-12, E-WM-22 and E-FC-4. With E-WM-17, E-WM-22 and Aglite Ultima, you can enjoy significant benefits including:-

- **ONE BLOCK ON SITE -** Party Walls, Inner leaf of Internal Walls, Beam & Block Floors, External Walls for render (7.3N/mm²) and below ground (7.3N/mm²)
- **CODE FOR SUSTAINABLE HOMES CREDITS**
- **NO REQUIREMENT FOR PARGE COAT** - no wet trade back onto site
- **AFFORDABLE SOLUTION**
- **THERMAL MASS PROPERTIES**
- **THERMAL BRIDGING DETAILS** out performs Table K1 (SAP 2012), where assessed.

For further information on robust details, please refer to Robust Details Ltd - Technical Guidance for Enhanced Design and Construction Details - **www.robustdetails.com**

THE CONSERVATION OF FUEL AND POWER, THE REDUCTION OF CARBON DIOXIDE EMISSIONS, THE ARREST OF CLIMATE CHANGE AND THE COMMITMENT TO SUSTAINABLE DESIGN AND CONSTRUCTION IS CENTRAL TO GOVERNMENT HOUSING POLICY. IT IS NOW ESTIMATED THAT OVER 25% OF THE UK'S CO_2 EMISSIONS – A MAJOR CAUSE OF CLIMATE CHANGE – IS CONTRIBUTED BY ENERGY USAGE IN THE HOME, IN THE FORM OF HEAT, LIGHT AND LIFESTYLE ACTIVITIES.

THERMAL INSULATION PERFORMANCE

IN APRIL 2014, THE GOVERNMENT INTRODUCED CHANGES TO PART L1A (CONSERVATION OF FUEL AND POWER) OF THE BUILDING REGULATIONS. THEIR AIM IS TO FURTHER COMBAT CLIMATE CHANGE WITH AN IMPROVEMENT IN THE OVERALL ENERGY EFFICIENCY OF NEWLY BUILT DWELLINGS. THE IMPROVED ENERGY EFFICIENCY IS ACHIEVED BY LOWERING THE CO_2 EMISSION RATE BY MEANS OF MAKING INSULATION IMPROVEMENTS AND FOCUSING ON FABRIC ENERGY EFFICIENCY STANDARDS (FEES), MAKING USE OF ENERGY EFFICIENT HEATING SYSTEMS, ADVANCED HEATING CONTROL TECHNOLOGIES, RENEWABLE TECHNOLOGY AND THE ATTENTION TO DETAIL AT JUNCTIONS WHERE TWO THERMAL ELEMENTS MEET - THERMAL BRIDGING.

THE HIGH THERMAL EFFICIENCY OF PLASMOR BLOCKS, WHEN USED IN TRADITIONAL CONSTRUCTIONS, EASILY SATISFY PART L1A REQUIREMENTS AND THE CODE FOR SUSTAINABLE HOMES.

To view and download various technical data sheets including the Plasmor Code for Sustainable Homes and the Thermal Insulation Performance and Acoustic Performance Guide, visit **www.plasmor.co.uk**

AGLITE Ultima®

THE DEFINITIVE HOUSEBUILDER BLOCK

The one block for all situations -

- **EXTERNAL WALLS** - Outer and Inner leaf
- **PARTY WALLS**
- **INTERNAL LOADBEARING WALLS**
- **INTERNAL PARTITION WALLS**
- **SUSPENDED FLOORS** - Beam and Block
- **WALLS BELOW DPC**
- **PARTY FLOORS**
- **INTERNAL WALLS**

To compliment the introduction of Aglite Ultima, Plasmor launch the NEW, WEIGHT SAVING and TIME SAVING

AGLITE Foundation14

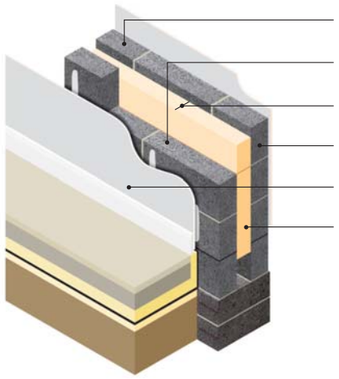
With a WEIGHT OF ONLY 14KG, SOME 4KG LIGHTER than alternative aggregate foundation blocks, even more significant savings may be made due to faster laying rates.

AGLITE FOUNDATION 14 BLOCKS ARE SAFER TOO - It is generally accepted that repetitive lifting of individual units below knee level, ie. in foundation situations, carries a greater risk than normal block laying. For this reason Plasmor introduce the 14kg, lighter weight, Aglite Foundation14. (300mm x 275mm x 140mm)

AGLITE Ultima®
ACOUSTIC SOLUTIONS

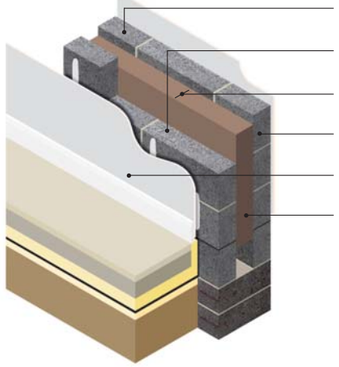
Enjoy the significant benefits of Aglite Ultima and achieve credits under the Code for Sustainable Homes and EcoHomes. For further information contact our **Technical Helpline: 01977 673221**

SEPARATING WALL USING PLASMOR AGLITE Ultima — E-WM-17



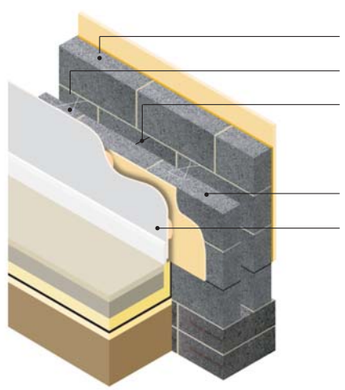
Block density	Plasmor AGLITE Ultima
Wall ties	Approved Document E 'Tie Type A'
Cavity width	75mm (min)
Block thickness	100mm AGLITE Ultima each leaf
Wall finish	Gypsum based board (nominal 9.8kg/m²) mounted on dabs
Insulation	Isover RD Party Wall Roll
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity - clear, fully filled or partially filled with insulation

SEPARATING WALL USING PLASMOR AGLITE Ultima — E-WM-22



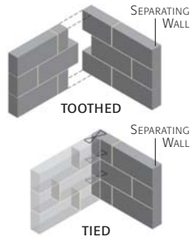
Block density	Plasmor AGLITE Ultima
Wall ties	Approved Document E 'Tie Type A'
Cavity width	100mm (min)
Block thickness	100mm AGLITE Ultima each leaf
Wall finish	Gypsum based board (nominal 10kg/m²) mounted on dabs
Insulation	100mm Knauf Earthwool Masonry Party Wall Slab or 100mm Superglass Party Wall Roll
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity - clear, fully filled or partially filled with insulation

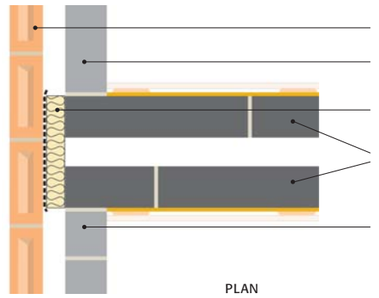
SEPARATING WALL USING PLASMOR AGLITE Ultima — E-WM-12



Block density	Plasmor AGLITE Ultima
Wall ties	Approved Document E 'Tie Type A'
Cavity width	75mm (min) clear cavity or
Cavity Insulation Option	The cavity may be insulated with mineral wool with a maximum density of 40kg/m³
Block thickness	100mm AGLITE Ultima each leaf
Wall finish	Gypsum based board (nominal 8kg/m²) mounted on dabs on cement:sand render (nominal 8mm) with scratch finish. Typical render mix 1:1:6 to 1:1/2:4, or alternative such as British Gypsum Soundcoat Plus, Knauf Gypsum Parge Coat or Larfarge Ecoat Parge Coat, all nominal 8mm (minimum 6mm). Render mix must not be stronger than background
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity - clear, fully filled or partially filled with insulation

EXTERNAL *(FLANKING)* WALL USING PLASMOR AGLITE Ultima — E-WM-12





- Masonry outer leaf
- External wall cavity (minimum 50mm)
- Close cavity with a flexible cavity stop unless it is fully filled with built-in mineral wool insulation
- Separating walls 100mm AGLITE Ultima
- Inner leaf where there is no separating floor e.g. for houses
  - 100mm AGLITE Ultima (1050 kg/m³)
  - Internal finish - 13mm plaster or nominal 8kg/m² gypsum based board

SEPARATING FLOORS - CONCRETE — E-FC-4

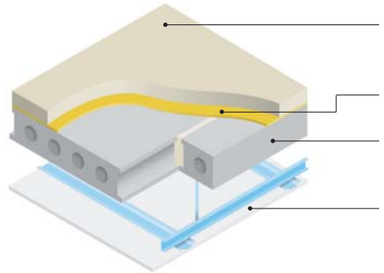


Illustration shows CT0 type ceiling treatment

Screed	65mm (min) cement:sand screed or 40mm (min) proprietary screed of nominal 80kg/m² mass per unit area
Resilient layer	6mm IsoRubber layer with IsoEdge flanking strip
Structural floor	- 150mm (min) precast concrete floor plank - 300 kg/m² (min) mass per unit area
Ceiling	See section 3 (Robust Details 2011) for suitable ceiling treatment which is dependent on floor plank depth and supporting wall density

Builders may register E-FC-4 with either E-WM-12, E-WM-17 or E-WM-22 to take full advantage of all the benefits of Plasmor Aglite Ultima. This is easily and quickly achieved for more information, visit www.robustdetails.com

GOOD SITE PRACTICE

- Keep cavity, insulation rolls and wall ties free from mortar droppings and debris
- Fully fill all blockwork joints with mortar.
- Make sure there is no connection between the two leaves except for wall ties, insulation and foundation.
- Ensure that only Plasmor "Aglite Ultima" blocks are used in the construction of separating and flanking walls.
- Keep any chases for services to a minimum and fill well with mortar.
- Ensure compliant acoustic insulation is specified and fitted in accordance with manufacturer's specifications. Ensure all acoustic insulation is tightly butted together and half cuts are made with a clean knife.
- Ensure that render is applied to the complete face of each leaf with a scratch finish (it may be omitted within the floor joist/beam zone) - E-WM-12 only.

Plasmor
CONCRETE PRODUCTS

AGLITE Ultima® THERMAL SOLUTIONS

More Thermal Bridging Values are available on www.plasmor.co.uk

E5 BEAM AND BLOCK
Ground Floor Junction

PTM-015

1. The R-value of the perimeter insulation should be at least 0.8m²K/W

2. Ensure the floor insulation is tightly butted against the external wall

3. Continue the cavity insulation at least 150mm below the top of the floor insulation

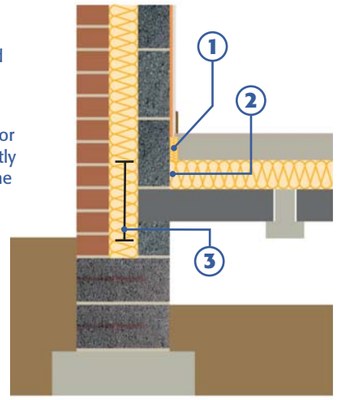
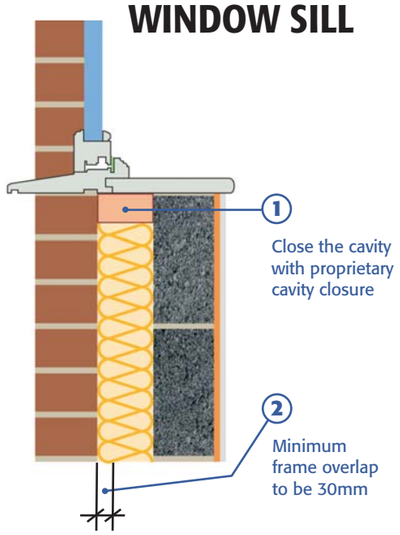


TABLE K1 APPROVED	Ψ = 0.16
100mm Full Fill λ0.032	Ψ = 0.067
50/50mm Partial Fill λ0.022	Ψ = 0.066

NB Based upon 150mm λ0.022 Floor Insulation

E3 WINDOW SILL

PTM-042



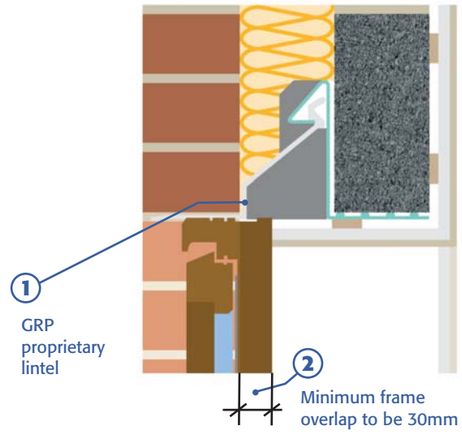
1. Close the cavity with proprietary cavity closure
2. Minimum frame overlap to be 30mm

TABLE K1 APPROVED	Ψ = 0.040
100mm Full Fill λ0.032	Ψ = 0.012
50/50mm Partial Fill λ0.022	Ψ = 0.016

NB Based upon Thermabate cavity closer

E2 LINTEL
Keystone Hi-Therm

PTM-005

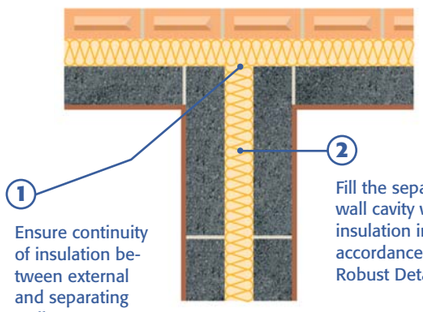


1. GRP proprietary lintel
2. Minimum frame overlap to be 30mm

TABLE K1 APPROVED	Ψ = 0.300
100mm Full Fill λ0.032	Ψ = 0.030
50/50mm Partial Fill λ0.022	Ψ = 0.050

E18 PARTY WALL
Robust Detail EWM-22

PTM-012

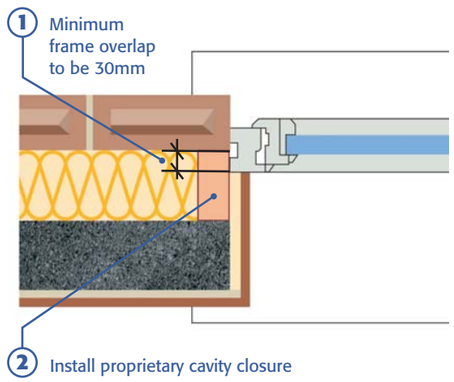


1. Ensure continuity of insulation between external and separating wall
2. Fill the separating wall cavity with insulation in accordance with Robust Detail

TABLE K1 APPROVED	Ψ = 0.060
100mm Full Fill λ0.032	Ψ = 0.040
50/50mm Partial Fill λ0.022	Ψ = 0.042

E4 WINDOW JAMB

PTM-045



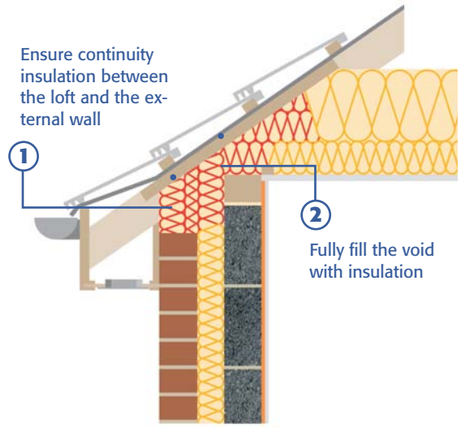
1. Minimum frame overlap to be 30mm
2. Install proprietary cavity closure

TABLE K1 APPROVED	Ψ = 0.050
100mm Full Fill λ0.032	Ψ = 0.015
50/50mm Partial Fill λ0.022	Ψ = 0.019

NB Based upon Cavalok cavity closer

E10 EAVES
Insulation at Ceiling Level

PTM-005



1. Ensure continuity insulation between the loft and the external wall
2. Fully fill the void with insulation

TABLE K1 APPROVED	Ψ = 0.060
100mm Full Fill λ0.032	Ψ = 0.039
50/50mm Partial Fill λ0.022	Ψ = 0.039

NB Based upon 400mm loft roll λ0.044

AGLITE Ultima®

Keep it Traditional

THERMAL SOLUTIONS

The illustrations shown here are just a few examples of wall constructions that achieve a U value of **0.28 W/m²K or better**

For further information or calculations contact our

Technical Helpline
01977 673221

PLEASE NOTE: To comply with NHBC requirements, a 50mm clear cavity is assumed in conjunction with partial fill insulation materials.

BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
100mm Superwall 36
INTERNAL FINISH
Plasterboard on dabs

0.28W/m²K

BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
50mm Partial Fill PIR λ0.022
INTERNAL FINISH
Plasterboard on dabs

0.27W/m²K

BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
50mm Xtratherm X021
with 50mm clear cavity
INTERNAL FINISH
Plasterboard on dabs

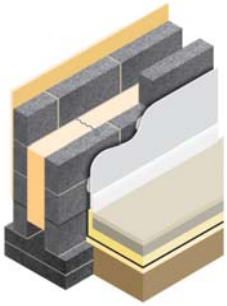
0.26W/m²K

BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
100mm Full Fill λ0.032
INTERNAL FINISH
Plasterboard on dabs

0.25W/m²K

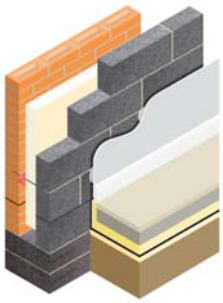
BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
75mm Xtratherm CavityTherm
INTERNAL FINISH
Plasterboard on dabs

0.23W/m²K



BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
125mm Full Fill λ0.032
INTERNAL FINISH
Plasterboard on dabs

0.21W/m²K



BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
75mm Partial Fill PIR λ0.022
with 50mm clear cavity
INTERNAL FINISH
Plasterboard on dabs

0.20W/m²K

BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
100mm Xtratherm CavityTherm
INTERNAL FINISH
Plasterboard on dabs

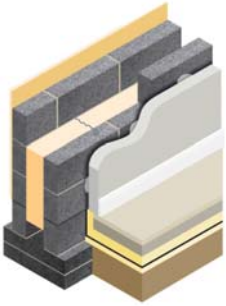
0.18W/m²K

BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
100mm Full Fill λ0.032
INTERNAL FINISH
40mm Xthratherm
Safe-R on dabs

0.18W/m²K

BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
150mm Full Fill λ0.032
INTERNAL FINISH
60mm Siniat Thermal K Board

0.13W/m²K



BLOCKWORK
100mm AGLITE Ultima
CAVITY INSULATION
125mm Isover Hi Cav 32
INTERNAL FINISH
70mm Gyproc
Thermaline Super

0.13W/m²K

BUILDING A SUSTAINABLE FUTURE

This is the ***AGLITE*** Ultima®

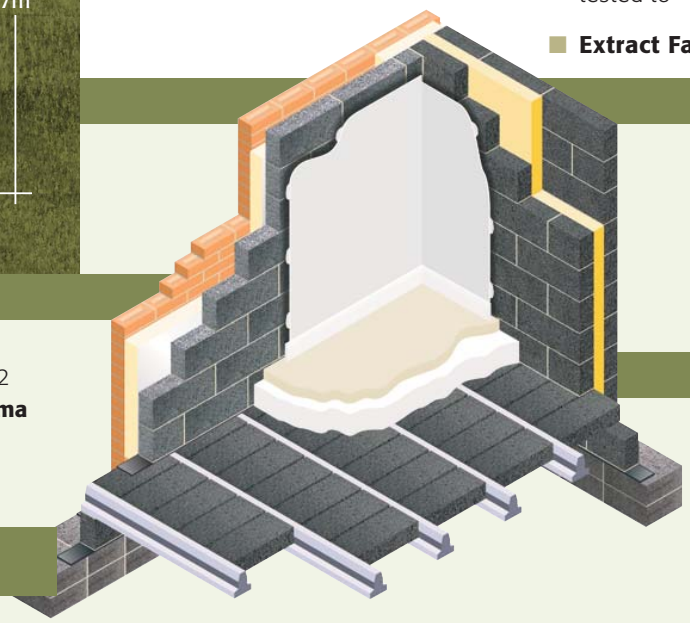
LIGHTWEIGHT AGGREGATE BLOCKS

ONE BLOCK - ONE HOUSE

Shown here is a Part L1A 2013/SAP 2012 calculation for a typical **3 bedroom semi detached house** which demonstrates compliance with the new Part L1A 2013 requirements. By incorporating ***AGLITE*** **Ultima** blocks into the calculations, compliance is straightforward and ***AGLITE*** **Ultima** blocks also provide extra benefits - excellent sound insulation, fire resistance, durability, thermal mass, buildability and a cost effective choice for all types of construction.

FACTORS EMPLOYED IN ACHIEVING TYPICAL COMPLIANCE

- **1 Door** UPVC Composite — U = **1.1**
- **Warm Living Area** = **25m²**
- **Total Opening** = **18%** of floor area
- **100% Low Energy Lighting**
- **Windows** UPVC, Double Glazed, Low E Soft Coat Glass — U = **1.2**
  Glazing = **12.62m²**
  6 x 0.9m x 1.35m
  2 x 0.9m x 0.9m
  1 x 1.77m x 2.1m
- **Air Pressure** tested to **5m³/(h.m²)**
- **Extract Fans** **2**



WALLS - MAIN

102mm Facing Brick
100mm Full Fill Insulation 0.032
100mm **Plasmor AGLITE Ultima**
12.5mm Plasterboard on dabs
3mm skim — U = **0.25**

ROOF PLANE

200mm Roll
k = 0.040 over
250mm Roll
k = 0.040 between
12.5mm Plasterboard
U = **0.09**

FLOOR

Block and Beam
100mm **AGLITE Ultima**
150mm Insulated Board
k = 0.022
65mm Screed
U = **0.12**

ROBUST DETAILS PARTY WALL E-WM-22

Gypsum based board (nominal 10kg/m²) mounted on dabs
100mm **Plasmor AGLITE Ultima**
100mm Knauf Earthwool Masonry Party Wall Slab or 100 Superglass Party Wall Roll
100mm **Plasmor AGLITE Ultima**
Gypsum based board (nominal 10kg/m²) mounted on dabs
Using Approved Document E Wall 'Tie Type A' Butterfly Ties
U = **0.00**

HEATING

Ideal logic ES
'enhanced load' compensator

Controls
Time and Temperature Zone Control
Delayed Start Thermostat

THERMAL BRIDGING

Calculated using Plasmor certification
Ψ **0.039**

TYPICAL RESULT

TER	18.20
DER	17.65
T FEE	50.70
D FEE	42.90

= PASS

Plasmor CONCRETE PRODUCTS

AGLITE Ultima®

THE DEFINITIVE HOUSEBUILDER BLOCK

ECONOMICAL
Economical compliance with all relevant Building Regulations.

11.5kg ONE HAND LIFT
Up to 5kgs lighter than alternative breeze blocks.

TIME SAVING
Faster laying rates due to lighter weight.

ACOUSTIC COMPLIANCE
New proprietary Robust Detail E-WM-12, E-WM-17, E-WM-22 and E-FC-4.

THERMAL PERFORMANCE
Part L1A 2013 compliant - u values down to 0.11W/m²K.

LOW MOISTURE MOVEMENT
Low drying shrinkage.

FIXABILITY
Made from granular aggregates, not powder, this low density Aglite Ultima accepts all standard fixings.

SUSTAINABLE & TRADITIONAL
Compliant with the Code for Sustainable Homes. Building in sustainability, longevity and economy using trusted, traditional methods.

PORTABILITY
Lighter and easier to move around sites.

HEALTH & SAFETY
Foundation 14 is sub 15kg unit weight - safer for repetitive lifting of individual units below knee level ie. foundation situations.

AGLITE Ultima® is a low density, lightweight load bearing block manufactured using a mix of Plasmor's own man-made expanded clay and high quality lightweight aggregates.

AGLITE Ultima® is open textured to accept plaster/render, plain ended and grey in colour.

AGLITE Ultima® is the cost effective 'one block on site' housebuilder block of choice.

PROPERTIES & PERFORMANCE

Mean Compressive Strength
4.2 N/mm² and 7.3 N/mm². 10.4 N/mm² to special order.

Dry Density
4.2 N & 7.3 N - 1050 Kg/m³. 10.4 N - 1150Kg/m³.

Thermal Properties (at 3% moisture)
k = 0.31W/m°C for 4.2 and 7.3 N.
k = 0.36W/m°C for 10.4 N.
Aglite Ultima is Part L1A compliant*.

Moisture Movement
Not greater than 0.60mm/m*.

Sound Insulation
Aglite Ultima complies with Part E and Robust Details E-WM-12, E-WM-17, E-WM-22 and E-FC-4 for walls and floors*.

Fire Resistance
Aglite Ultima is manufactured from Class 1 Fire Resistant Aggregate as defined in BS 5628 Part 3.

Shear Bond Strength
0.15 N/mm².

Fixability
Aglite Ultima blocks accept direct nailing and are easy and speedy to drill and plug.

Mortar Designation

Class (iii) for walls ABOVE DPC by volume

Cement : Lime : Sand	1 : 1 : 6
Cement : Sand	1 : 5 to 6

Class (ii) for walls BELOW DPC by volume

Cement : Lime : Sand	1 : ½ : 4
Cement : Sand	1 : 3 to 4

Rendering
Builders considering the use of proprietary single coat render systems must exercise caution to accurately adhere to the render manufacturers' design and specification guides. Furthermore, during application, strictly adhere to the specific and expansive application instructions, paying particular attention to prevailing weather conditions applied thereto. PLEASE NOTE that traditional rendering applications are not so seasonally and conditionally demanding.

** Please consult our technical department for further information.*

AUTHORITY

Aglite Ultima blocks are manufactured in production facilities to BS EN 771-3, with third party accreditation under BSI as follows:-

BS EN ISO 9001	FM 10847 Certificate Number
BS EN ISO 14001	EMS 536819 Certificate Number
BES 6001 BES 585086	- 'Good' achieved
BS EN 15037	*CPR 601346* **Beam & Block Floors** CE

AGLITE ULTIMA PACK SIZES AND WEIGHTS (Metric)

		100mm	140mm
Pack Sizes		9.6m²	6.4m²
Unit Weight	4.2/7.3N	10.9kg	15.3kg
	10.4N	11.9kg	16.7kg
Laid Weight	4.2/7.3N	113kg/m²	158kg/m²
	10.4N	123kg/m²	172kg/m²

Keep it Traditional

Technical Helpline: 01977 673221 **www.plasmor.co.uk**

Plasmor CONCRETE PRODUCTS