

The following charts have been produced to give an indication of minimum insulation thickness required for certain common U-values. They are not exhaustive and our Technical Services Department would be happy to provide specific calculations for combinations of blocks/insulation not covered or for other known U-values. Availability of actual thicknesses of insulation and suitability for any particular application should be confirmed with the manufacturer.

Traditional mortar joints

- TSD04-01 Brick outer leaf - Partially filled cavity - 100mm thick inner leaf
- TSD04-02 Brick outer leaf - Partially filled cavity - 140mm thick inner leaf
- TSD04-03 Brick outer leaf - Fully filled cavity - 100mm thick inner leaf
- TSD04-04 Brick outer leaf - Fully filled cavity - 140mm thick inner leaf
- TSD04-05 Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 100mm thick inner leaf
- TSD04-06 Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 140mm thick inner leaf
- TSD04-07 Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 100mm thick inner leaf
- TSD04-08 Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 140mm thick inner leaf
- TSD04-09 Rendered or clad 215mm thick solid wall

Celfix Thin layer mortar joints

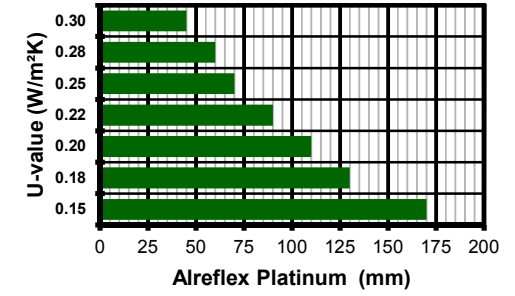
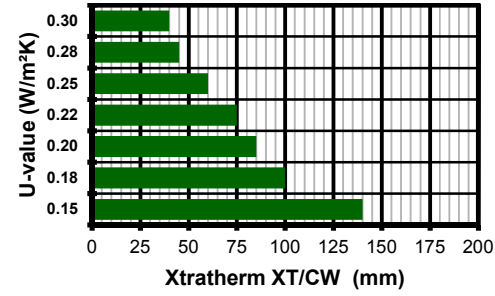
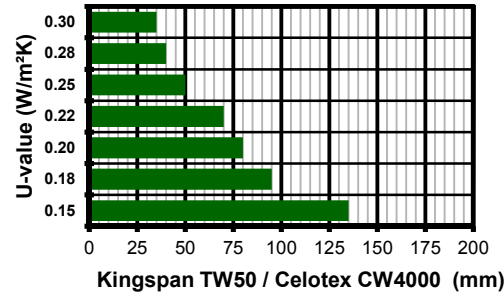
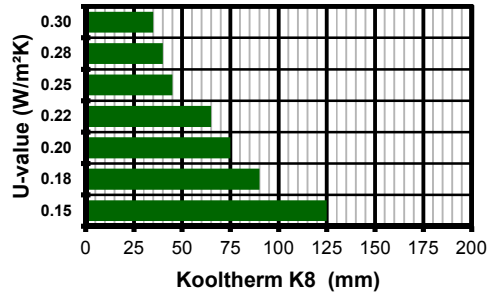
- TSD04-21 Brick outer leaf - Partially filled cavity - 100mm thick inner leaf
- TSD04-22 Brick outer leaf - Partially filled cavity - 140mm thick inner leaf
- TSD04-23 Brick outer leaf - Fully filled cavity - 100mm thick inner leaf
- TSD04-24 Brick outer leaf - Fully filled cavity - 140mm thick inner leaf
- TSD04-25 Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 100mm thick inner leaf
- TSD04-26 Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 140mm thick inner leaf
- TSD04-27 Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 100mm thick inner leaf
- TSD04-28 Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 140mm thick inner leaf
- TSD04-29 Rendered or clad 215mm thick solid wall

External wall U-values - Celcon blocks (440mm x 215mm) in traditional mortar

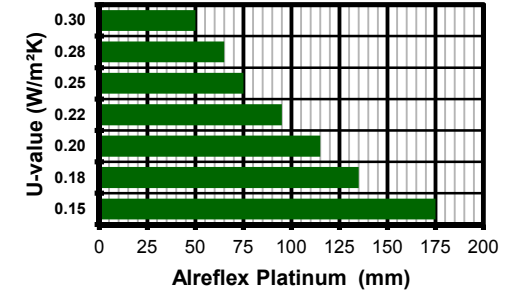
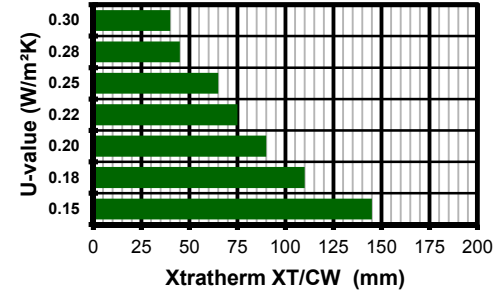
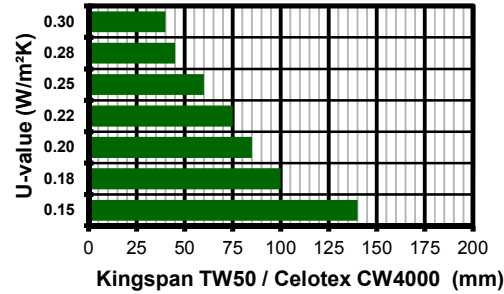
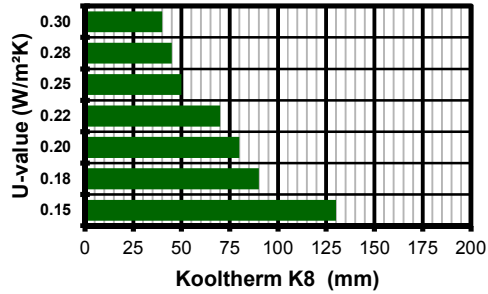


Brick outer leaf - Partially filled cavity - 100mm thick inner leaf

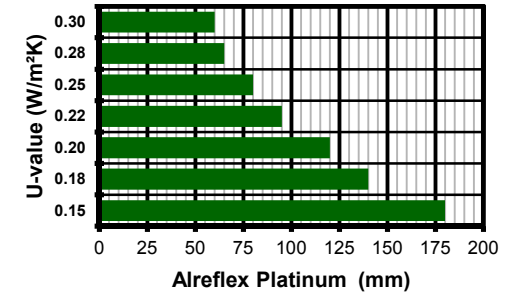
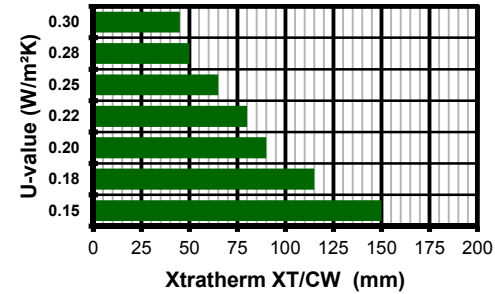
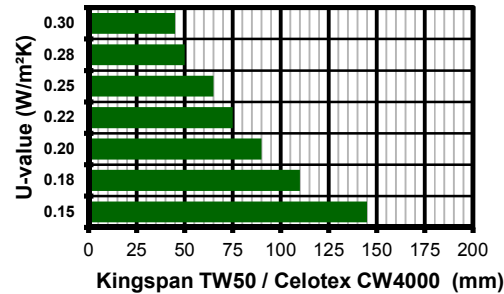
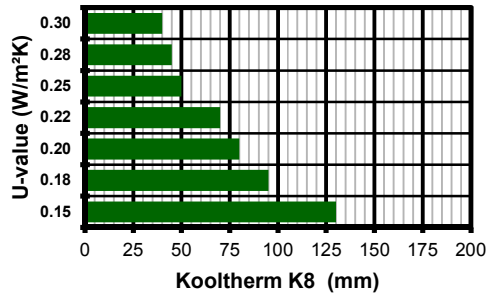
100mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



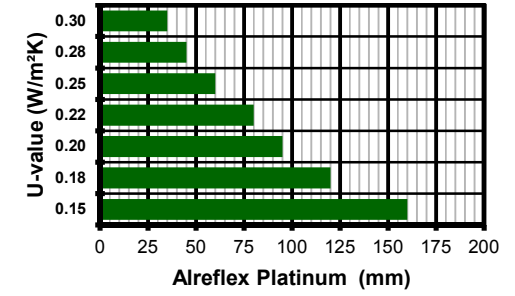
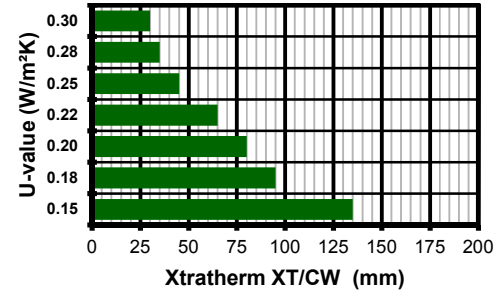
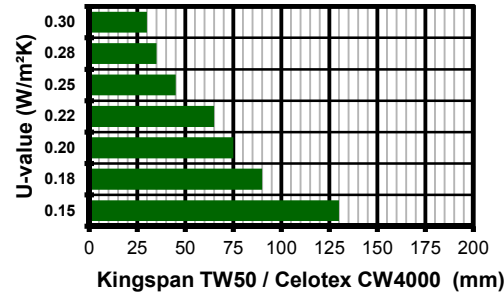
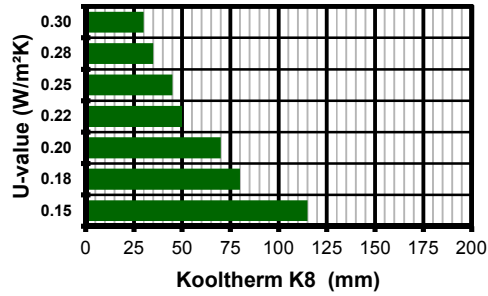
1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
2. Minimum 50mm clear cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
3. Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority.
4. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Celcon blocks (440mm x 215mm) in traditional mortar

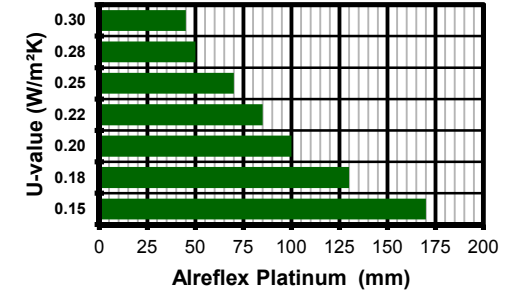
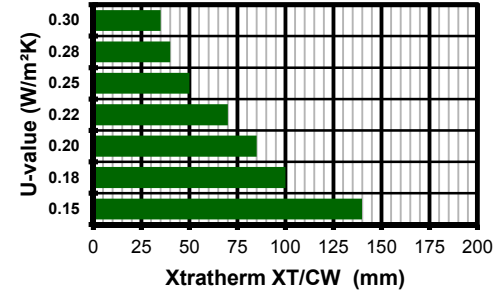
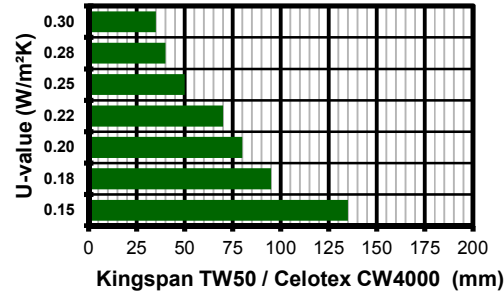
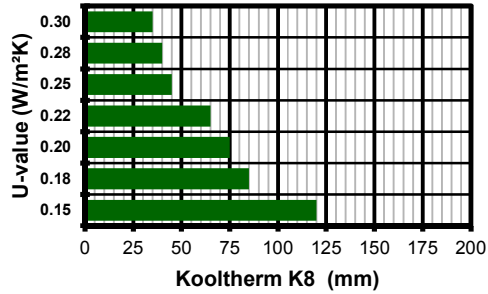


Brick outer leaf - Partially filled cavity - 140mm thick inner leaf

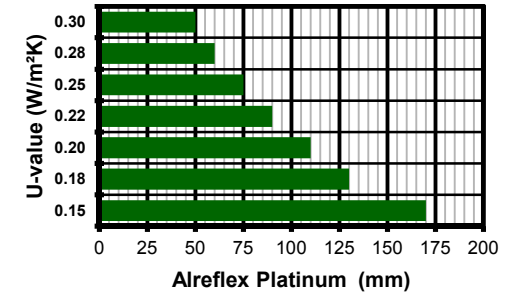
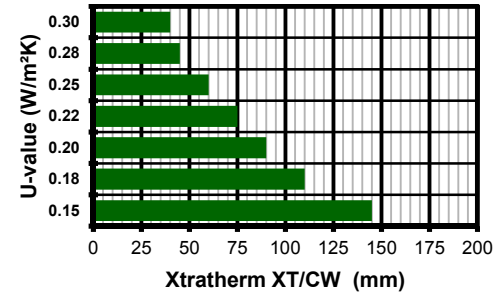
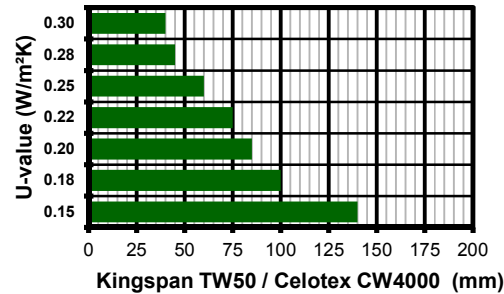
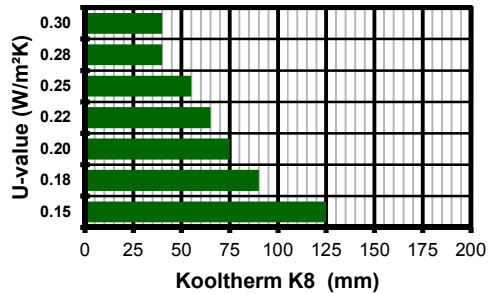
140mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



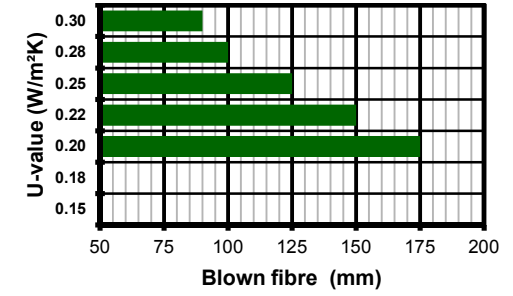
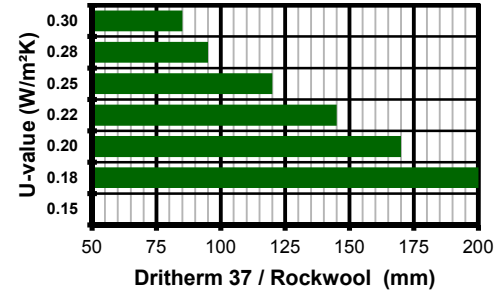
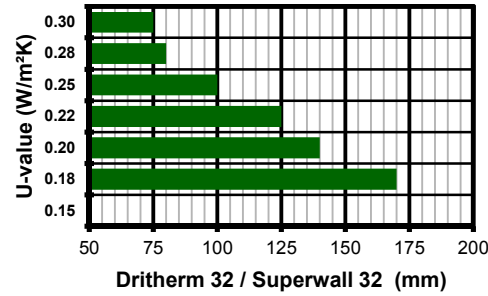
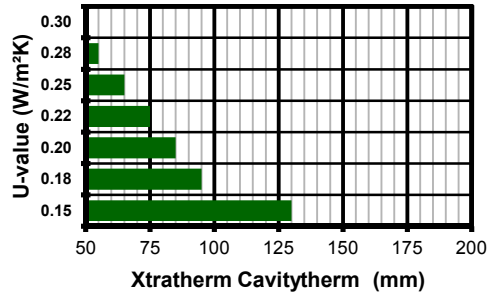
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External wall U-values - Celcon blocks (440mm x 215mm) in traditional mortar

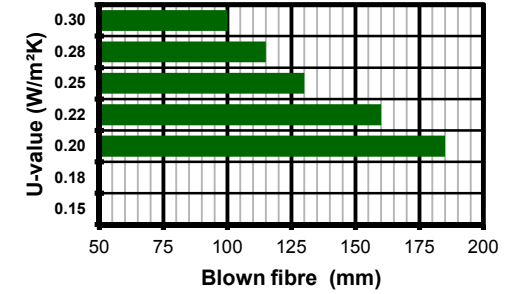
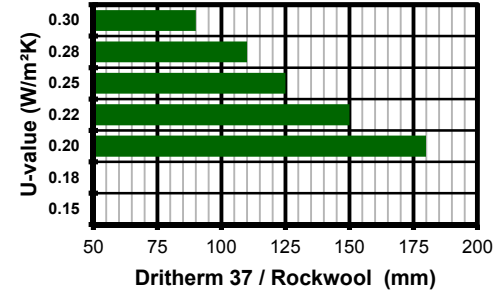
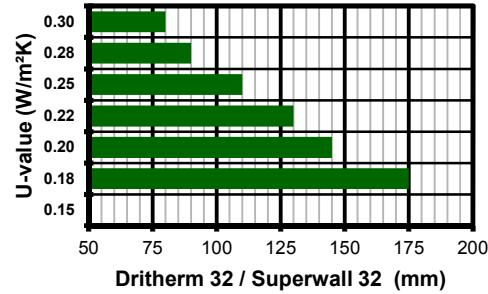
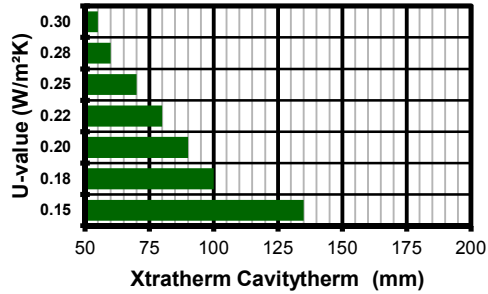


Brick outer leaf - Fully filled cavity - 100mm thick inner leaf

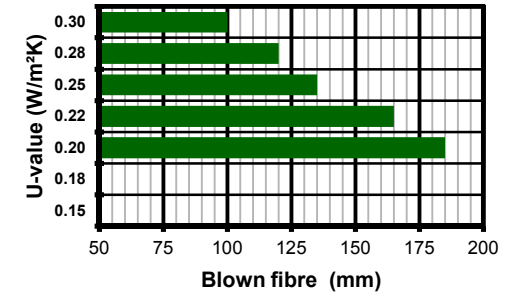
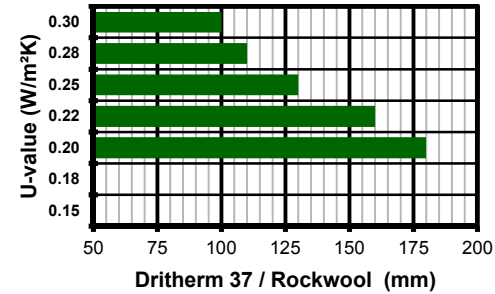
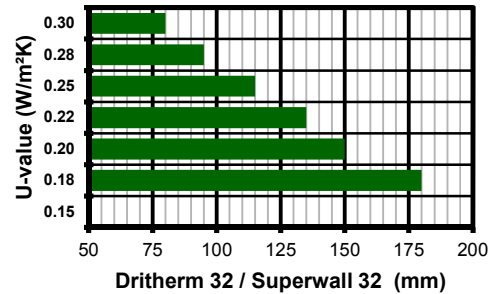
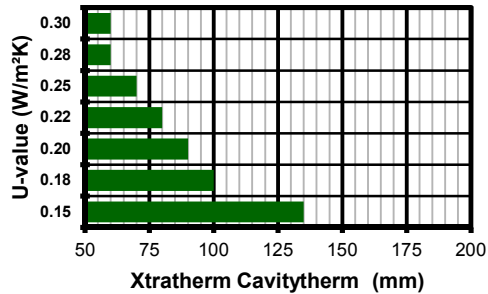
100mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



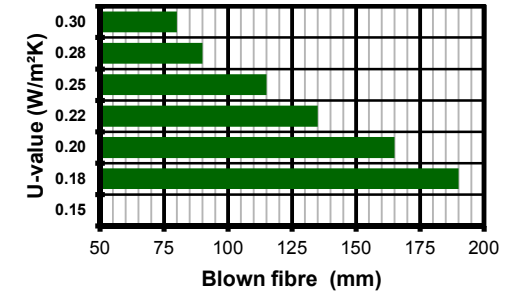
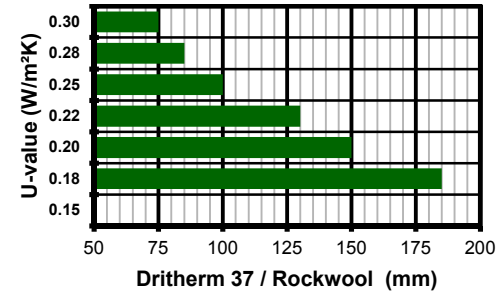
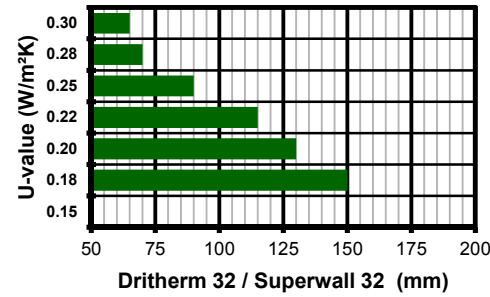
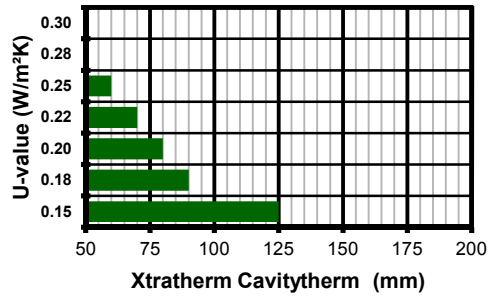
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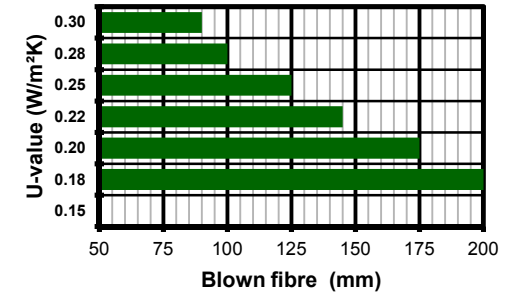
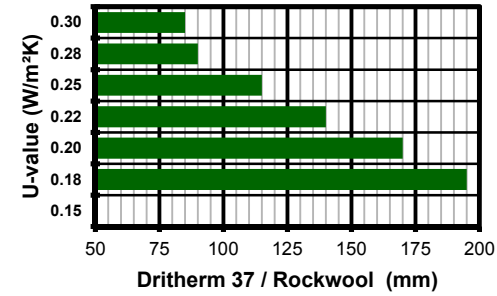
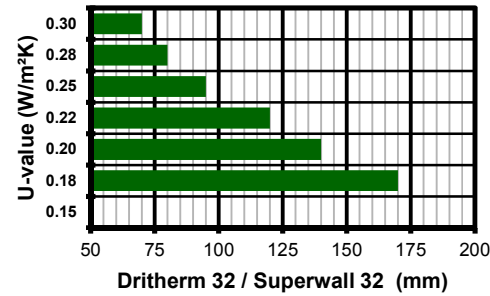
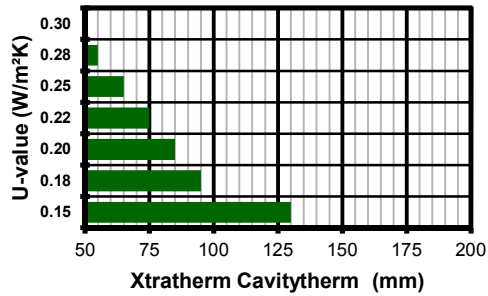


Brick outer leaf - Fully filled cavity - 140mm thick inner leaf

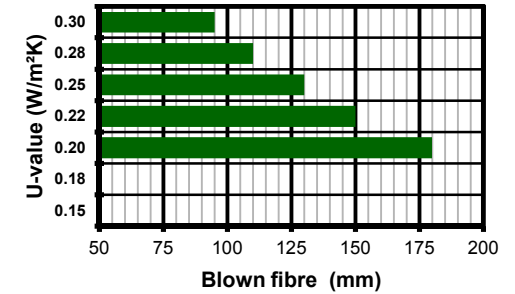
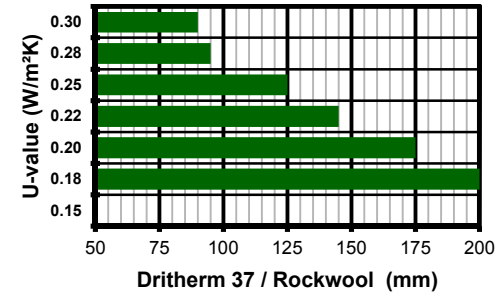
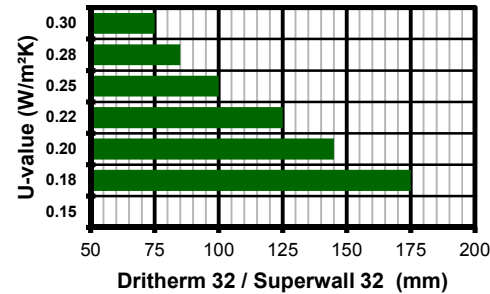
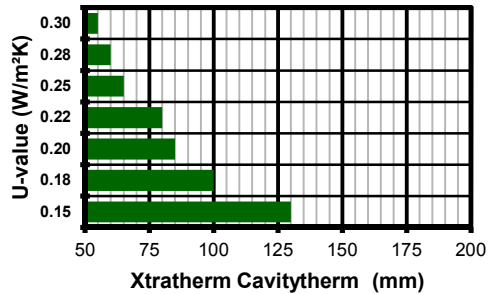
140mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



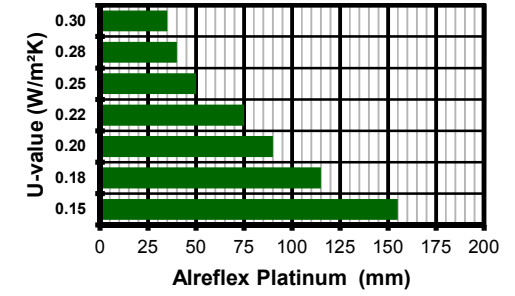
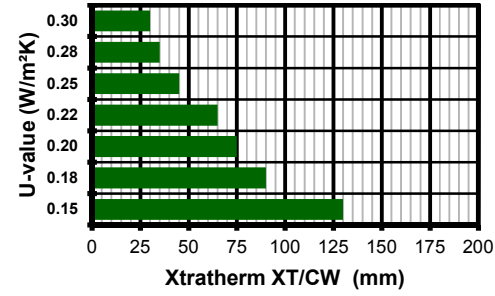
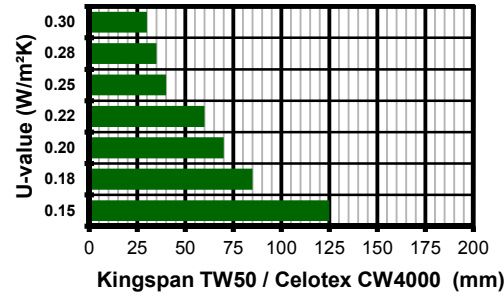
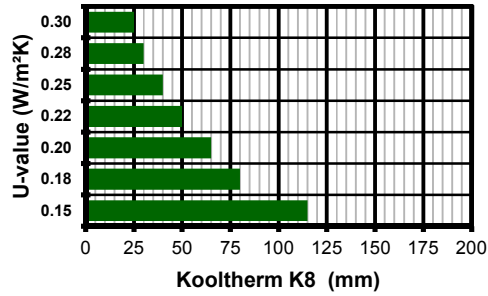
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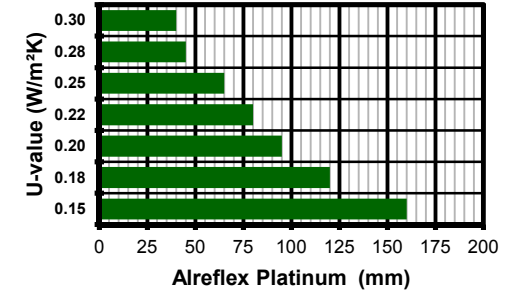
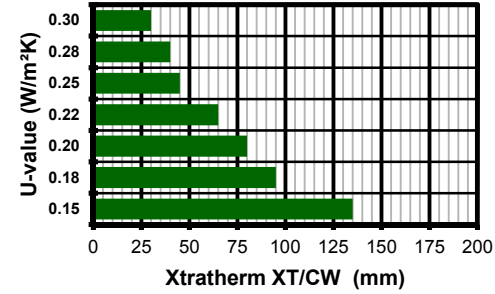
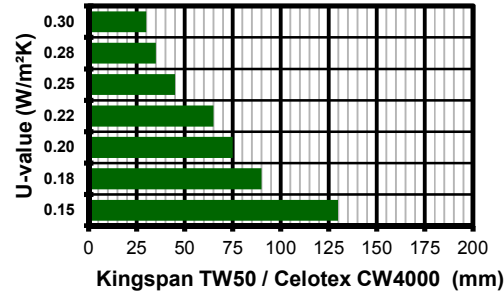
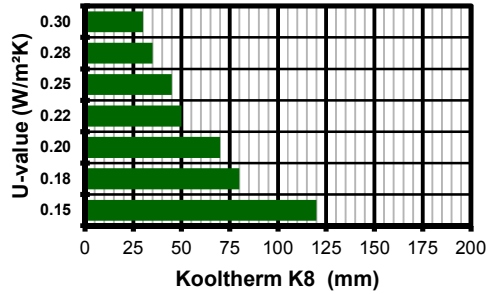


Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 100mm thick inner leaf

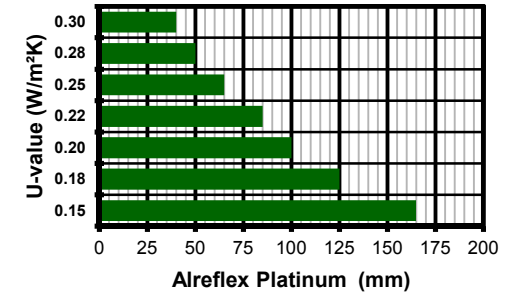
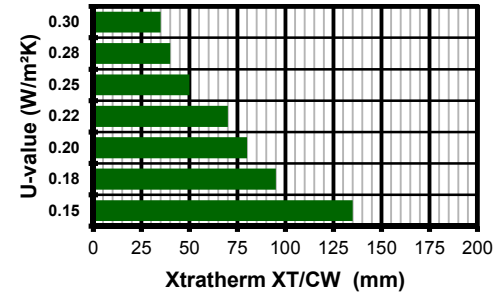
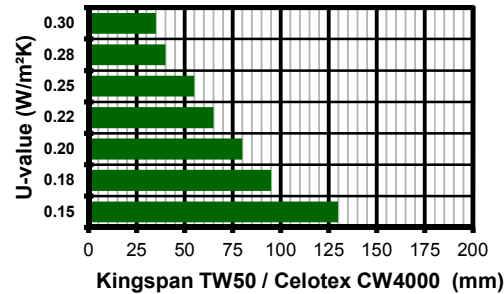
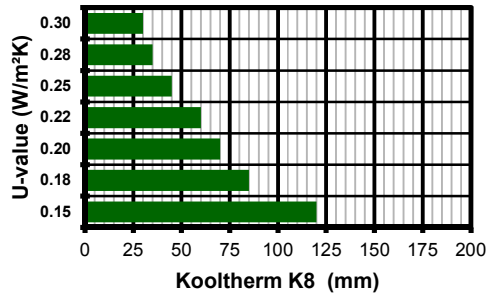
100mm Solar grade inner leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



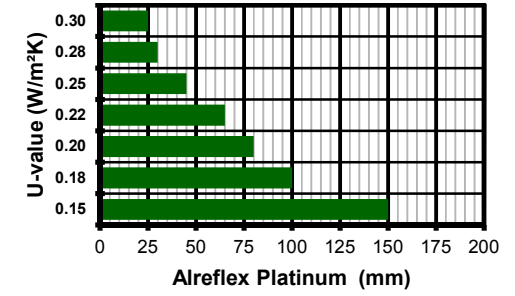
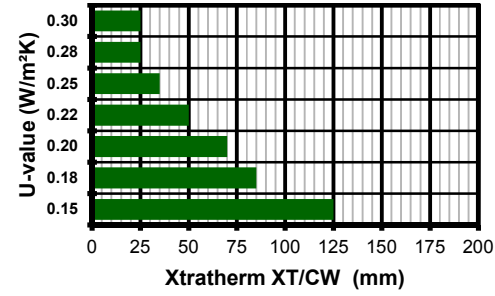
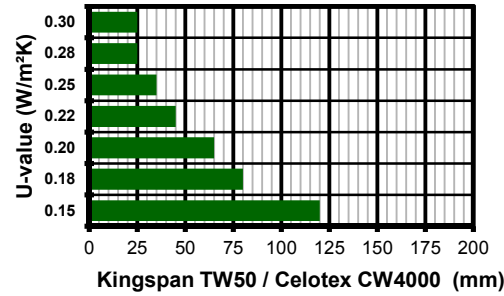
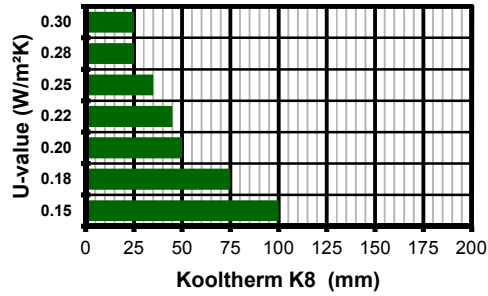
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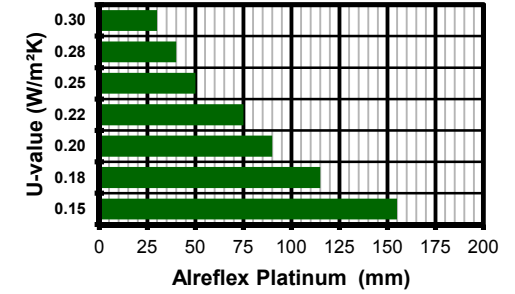
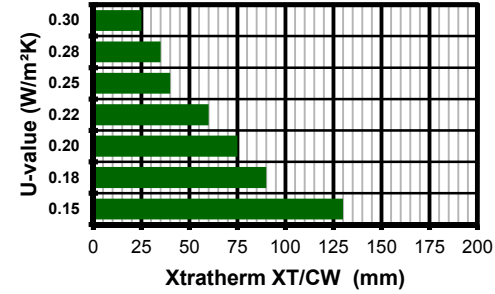
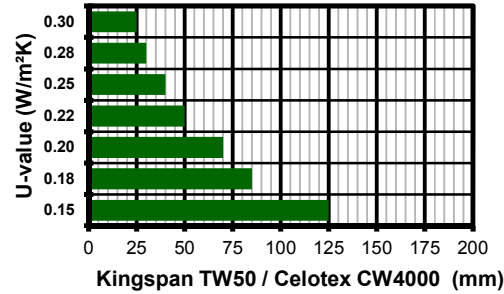
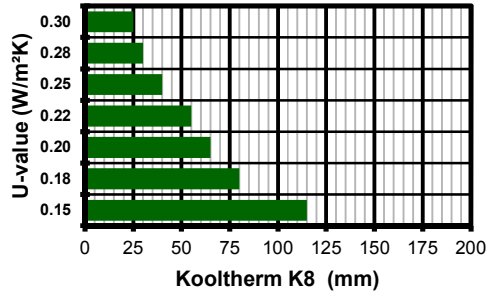
Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 140mm thick inner leaf



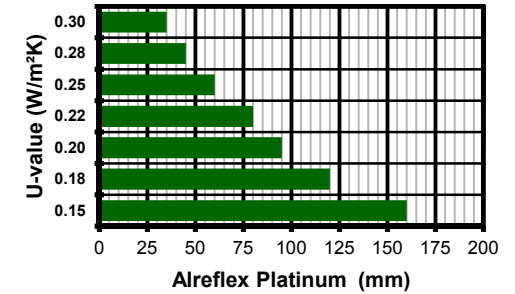
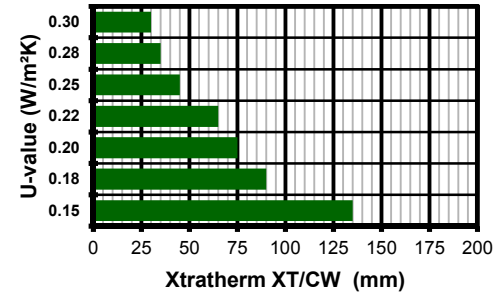
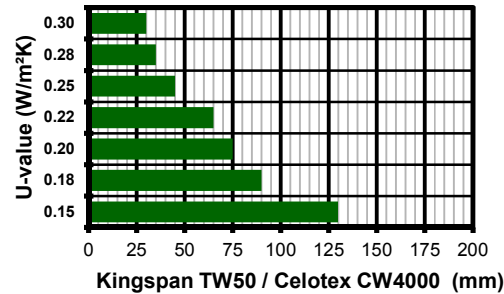
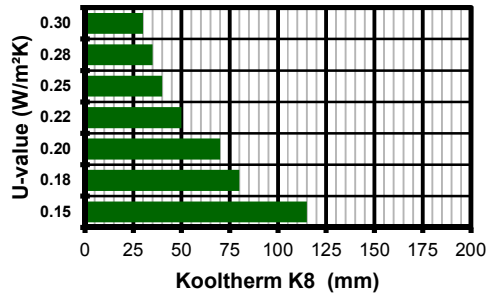
140mm Solar grade inner leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



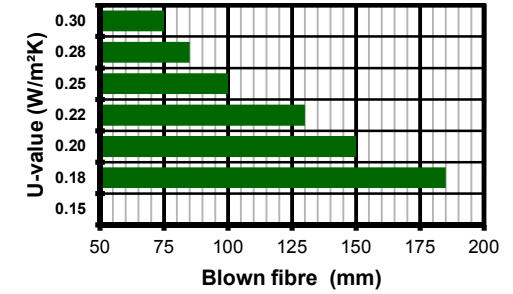
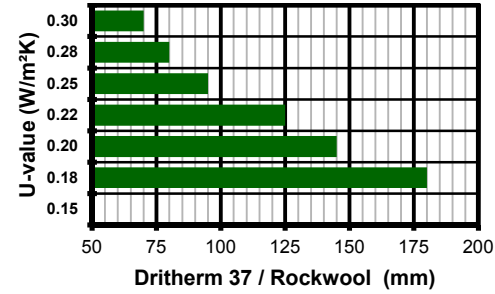
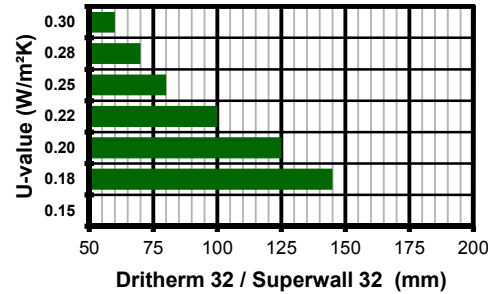
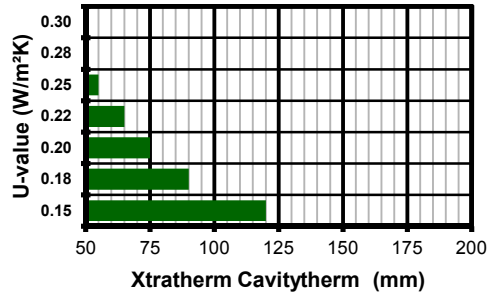
- All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
- Minimum 50mm clear cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
- Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority.
- Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
- H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Celcon blocks (440mm x 215mm) in traditional mortar

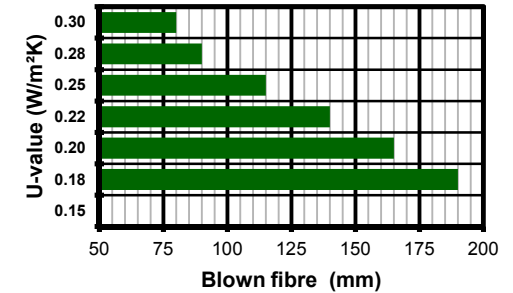
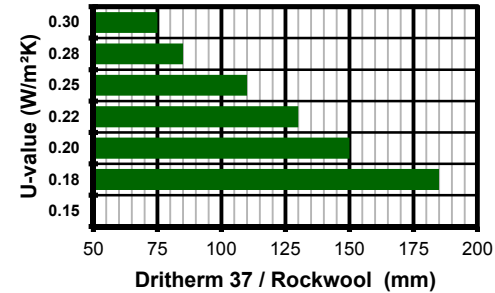
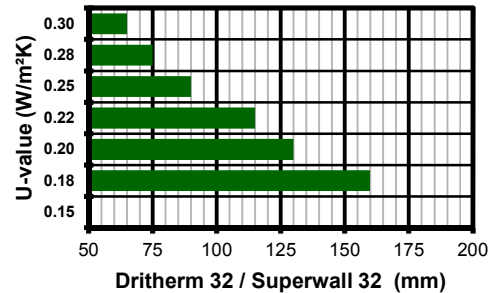
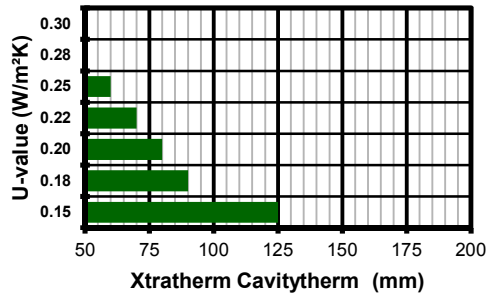


Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 100mm thick inner leaf

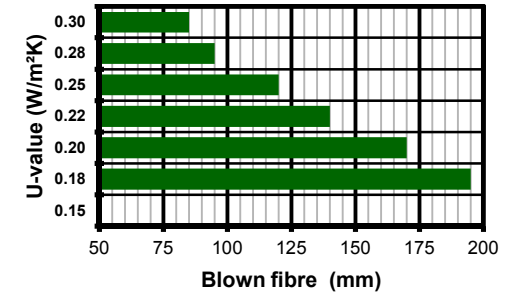
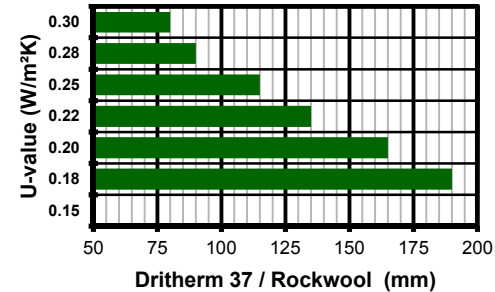
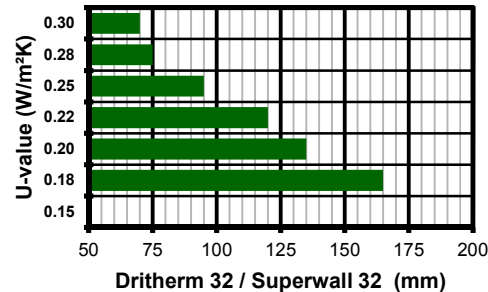
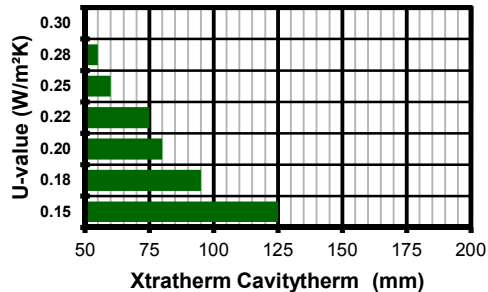
100mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



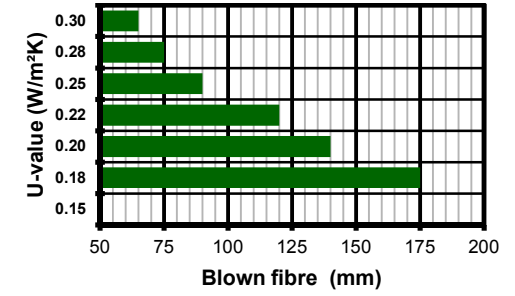
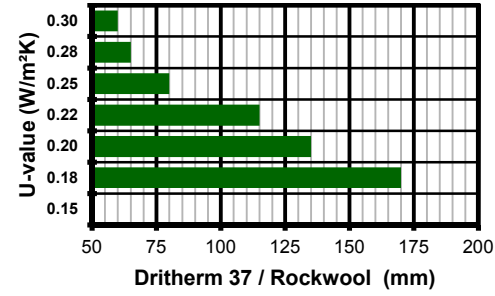
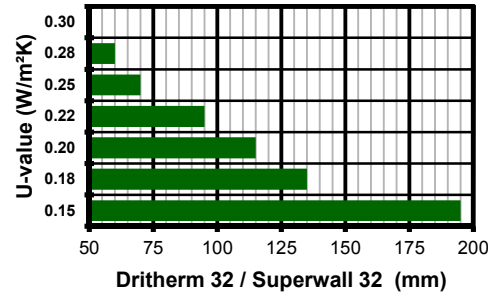
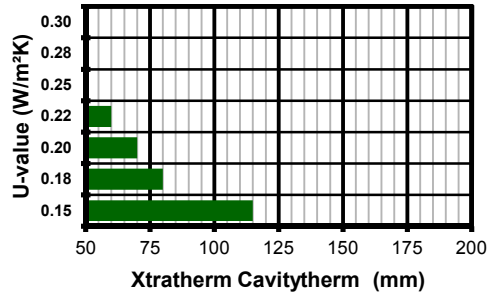
1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
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5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Celcon blocks (440mm x 215mm) in traditional mortar

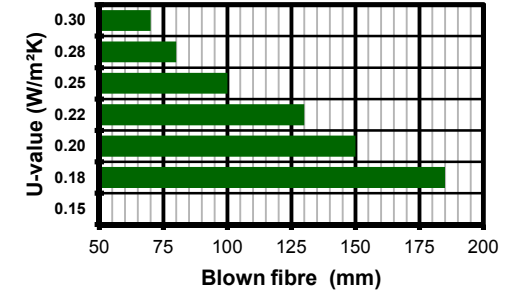
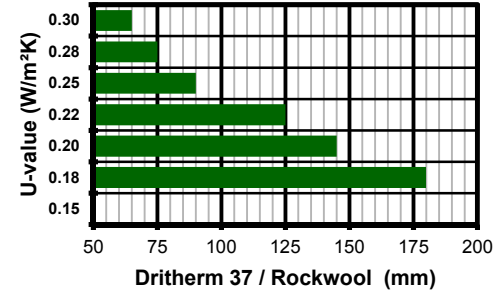
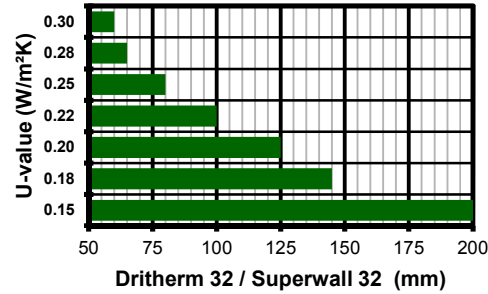
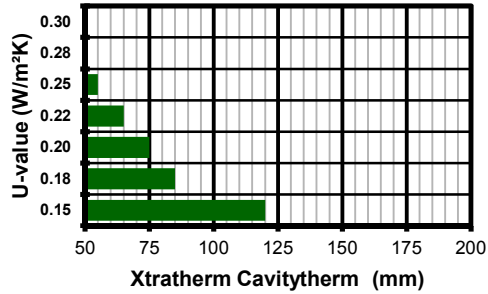


Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 140mm thick inner leaf

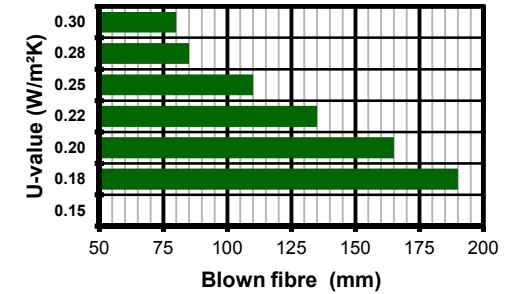
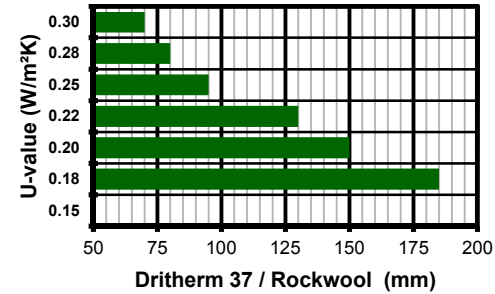
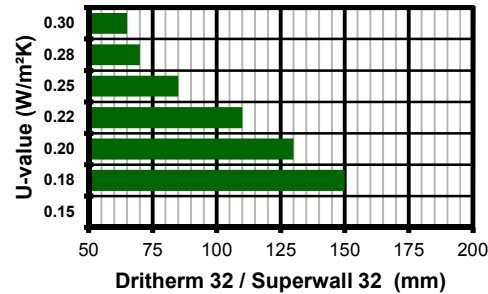
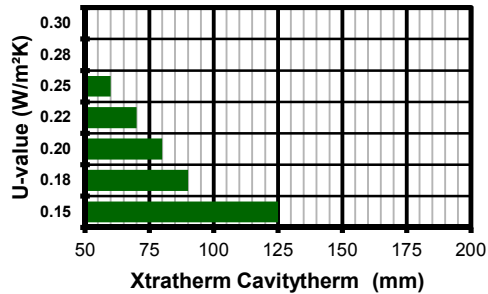
140mm Solar grade inner leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



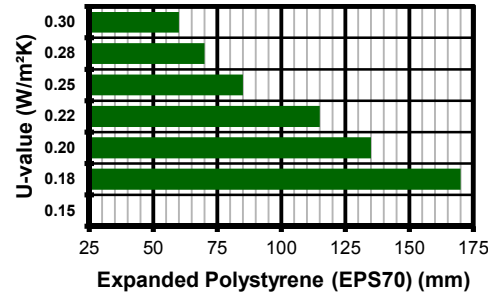
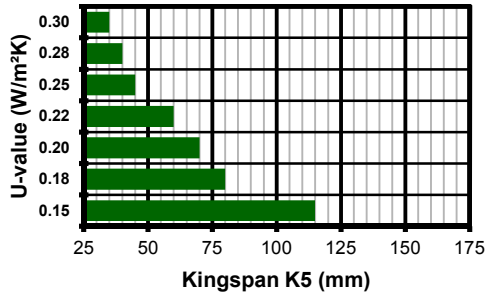
1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
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3. Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority.
4. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Celcon blocks (440mm x 215mm) in traditional mortar

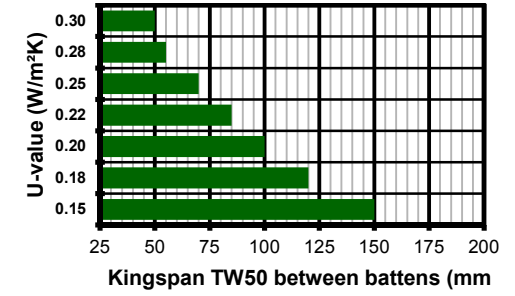
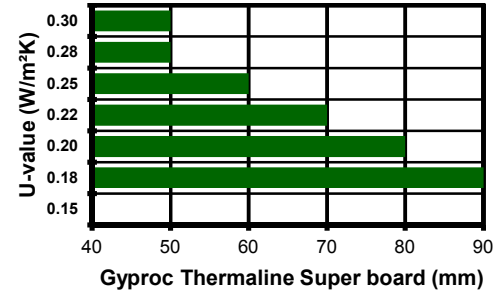


Rendered or clad 215mm thick solid wall

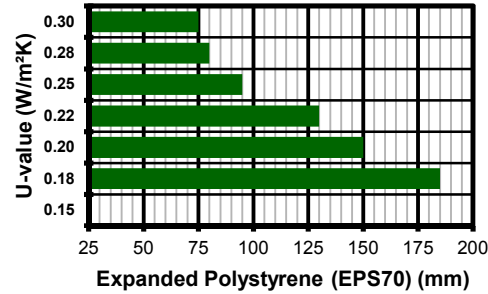
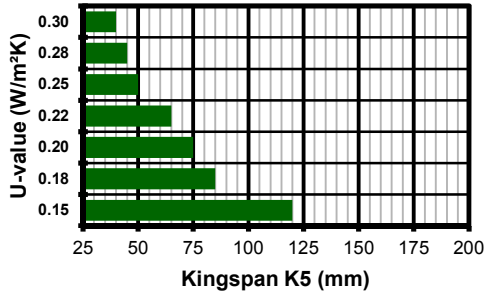
Solar grade - external insulation



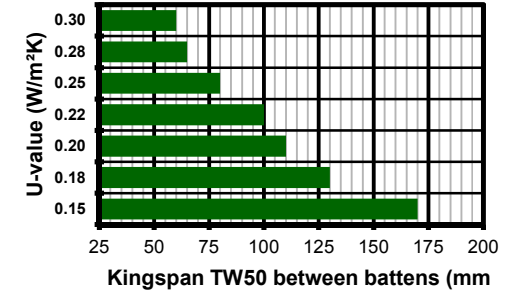
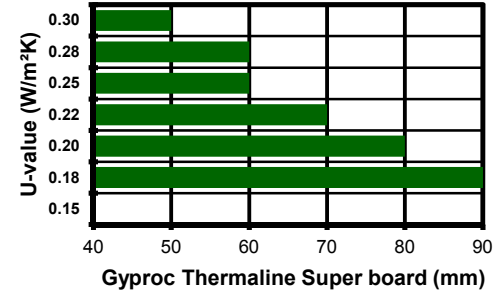
Solar grade - internal insulation



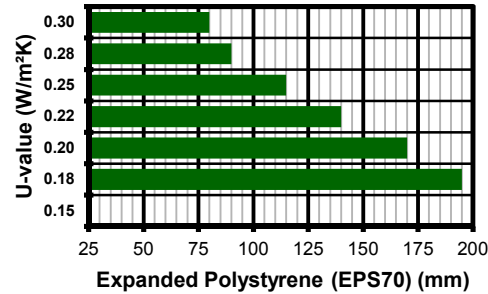
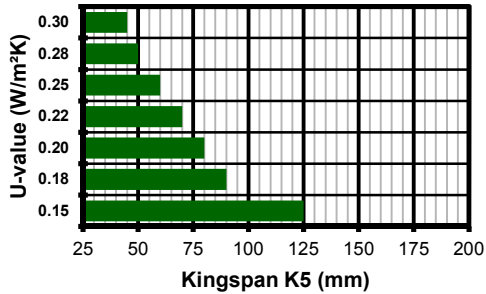
Standard grade - external insulation



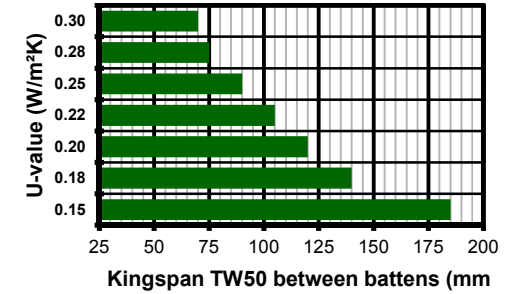
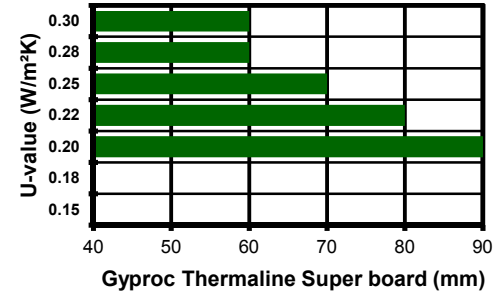
Standard grade - internal insulation



High or Super Strength grade - external insulation



High or Super Strength grade - internal insulation



1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.

2. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.

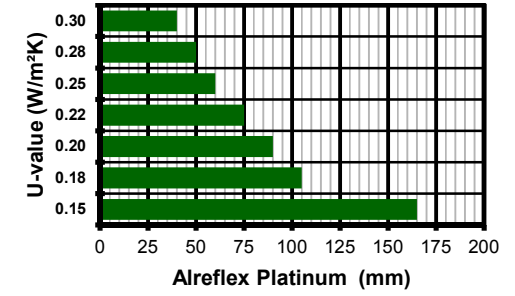
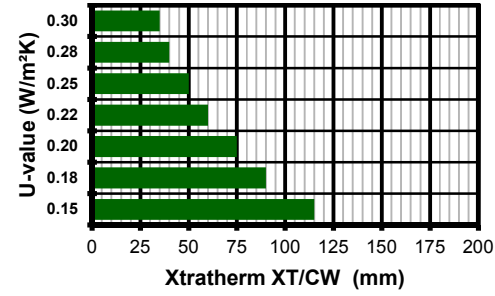
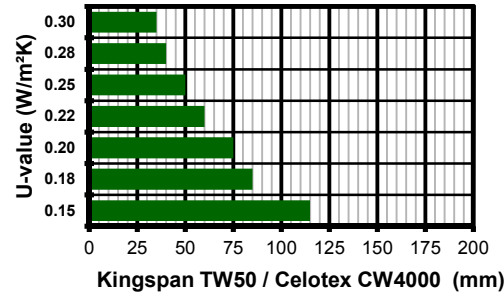
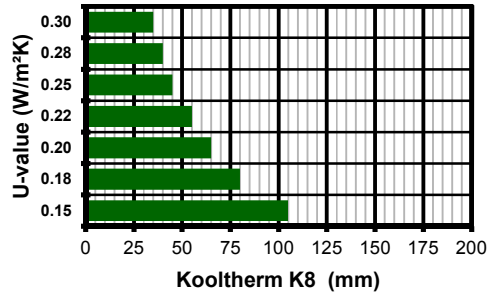
3. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

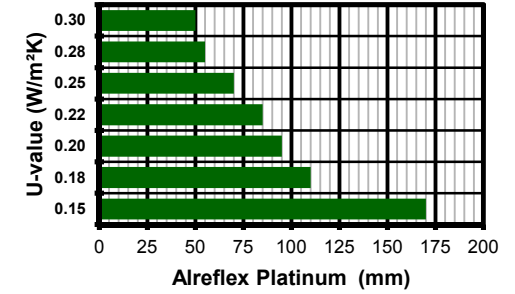
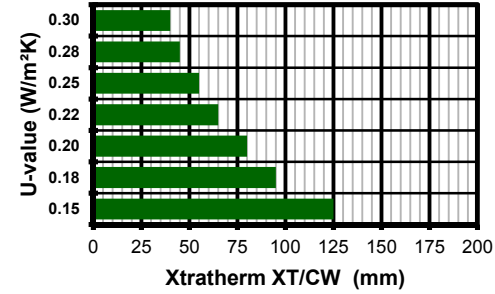
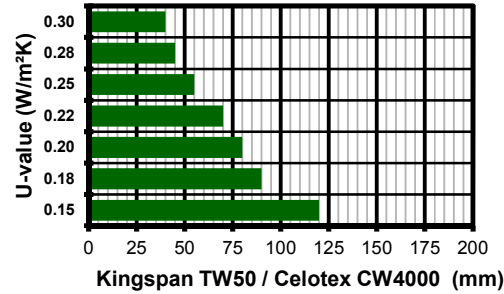
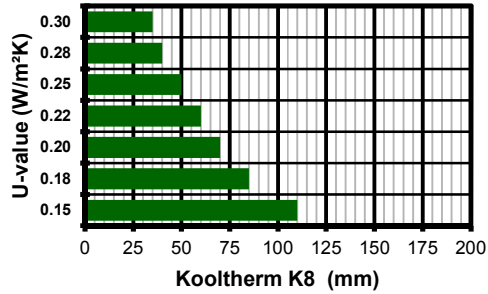


Brick outer leaf - Partially filled cavity - 100mm thick inner leaf

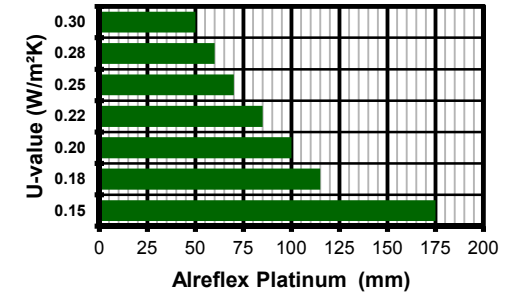
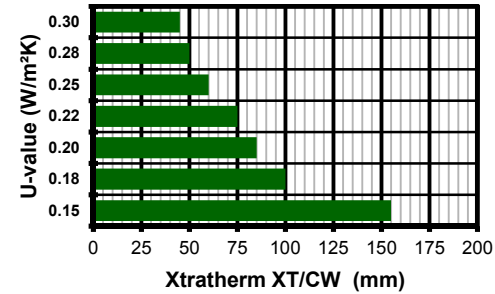
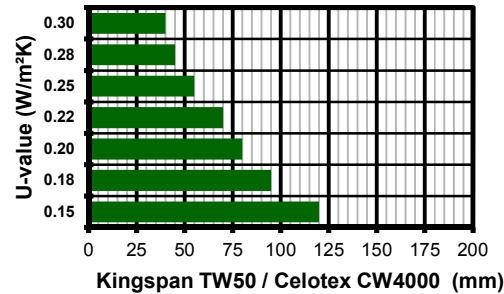
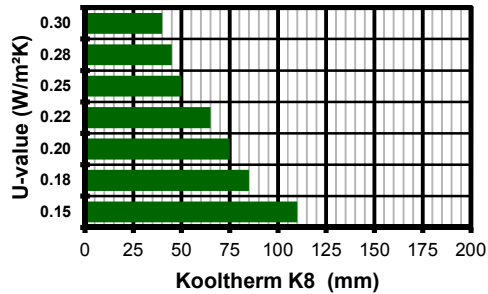
100mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



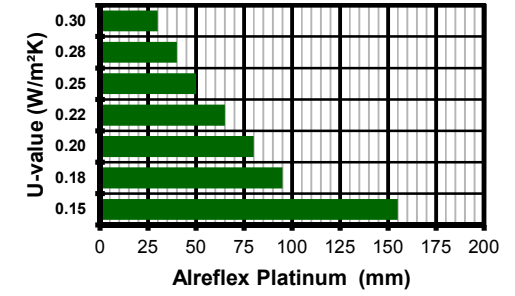
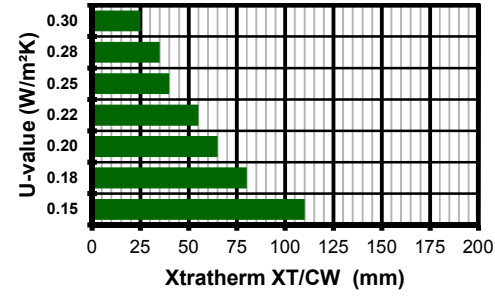
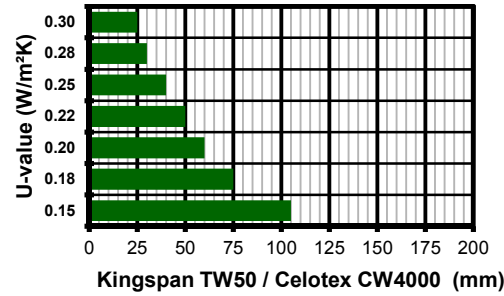
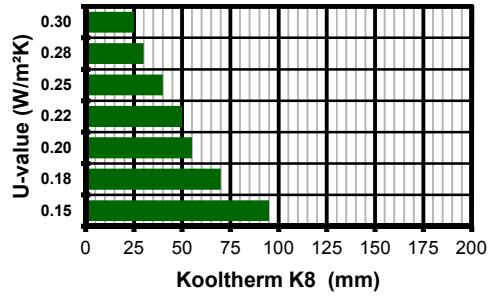
1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
2. Minimum 50mm clear cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
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5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

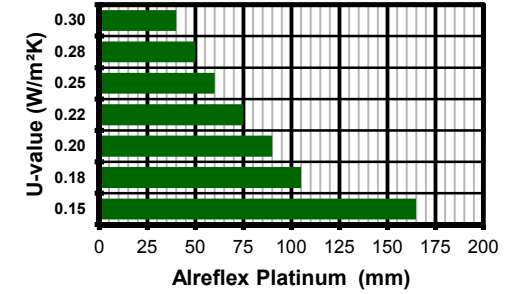
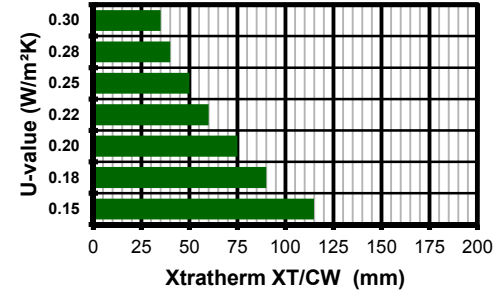
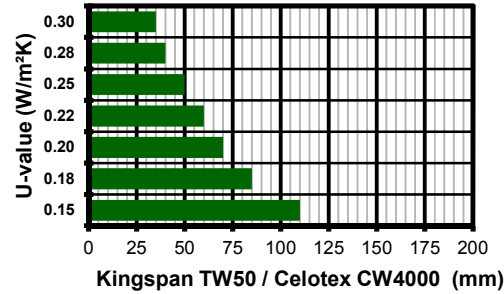
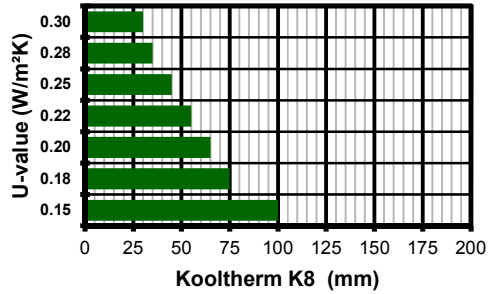


Brick outer leaf - Partially filled cavity - 140mm thick inner leaf

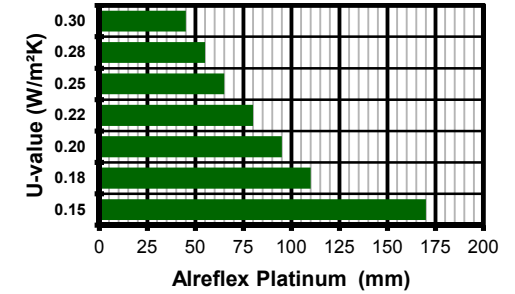
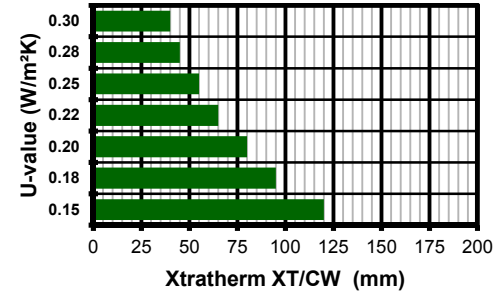
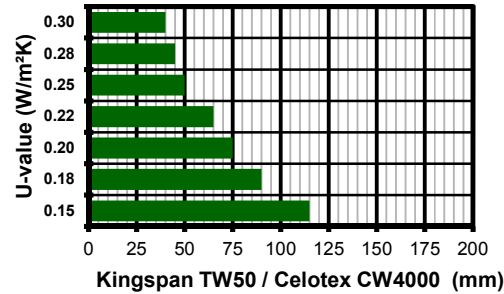
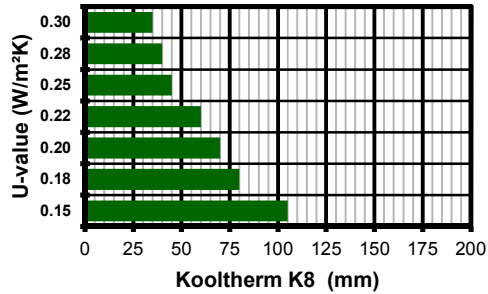
140mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



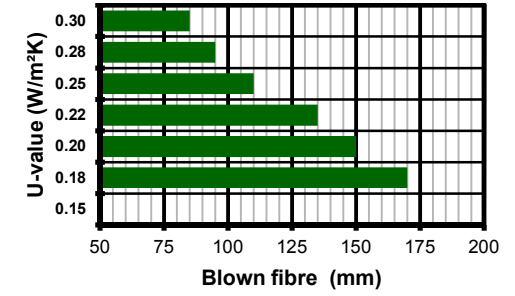
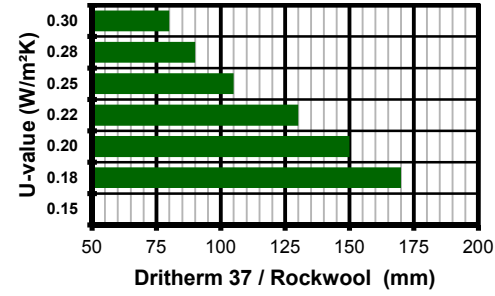
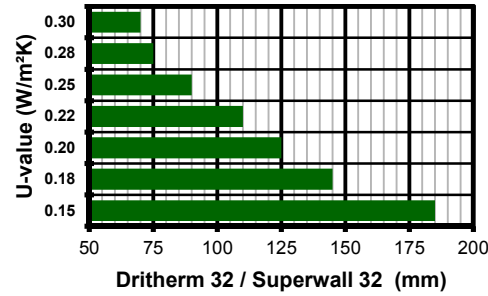
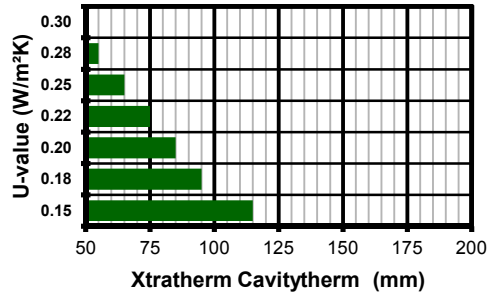
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External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

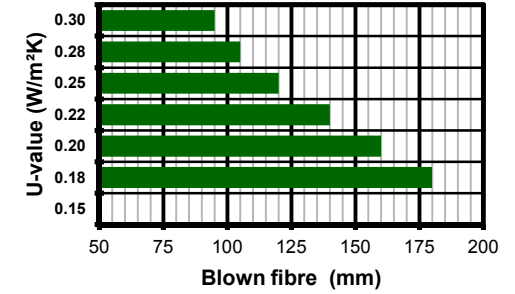
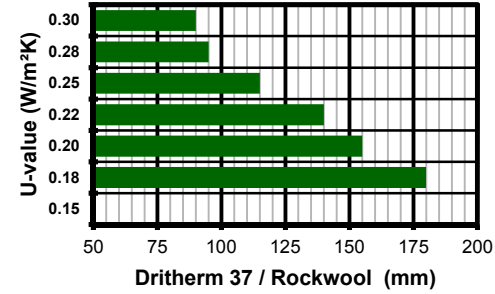
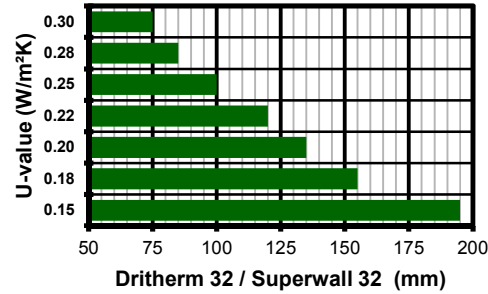
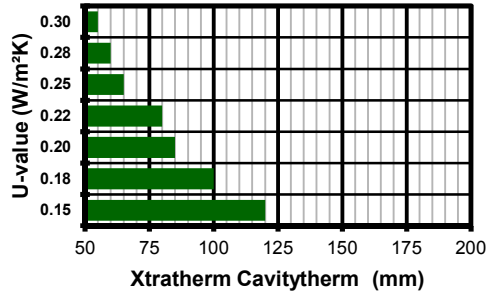


Brick outer leaf - Fully filled cavity - 100mm thick inner leaf

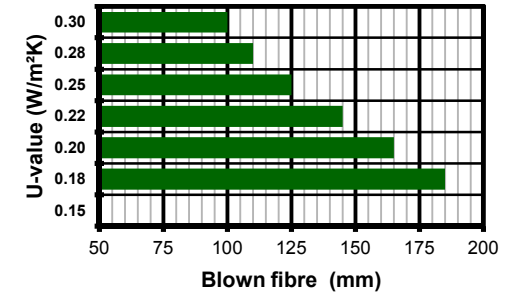
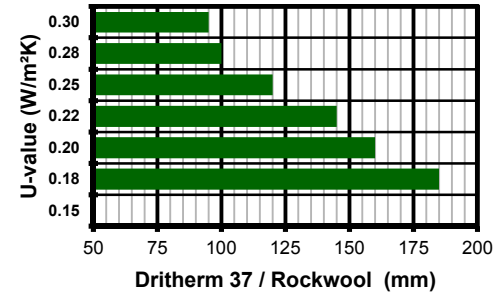
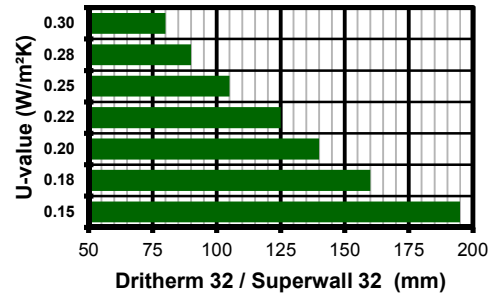
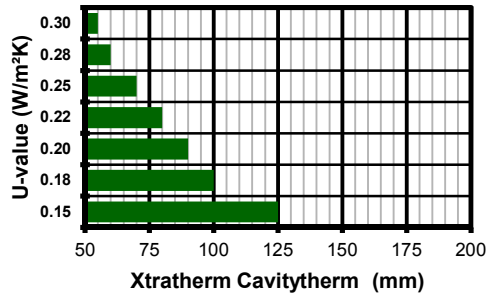
100mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



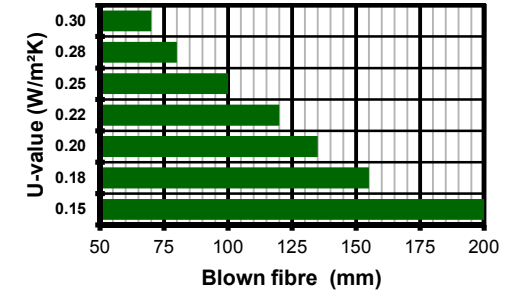
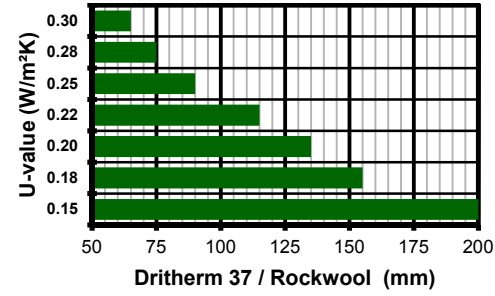
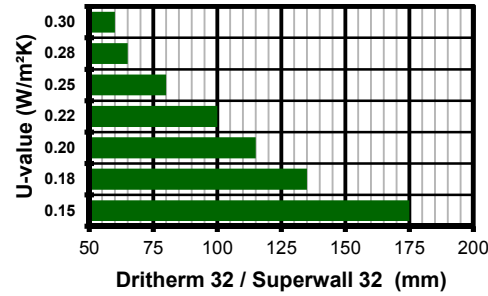
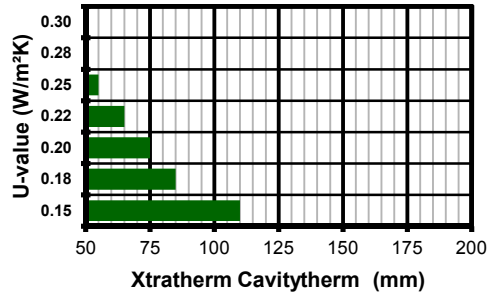
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External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

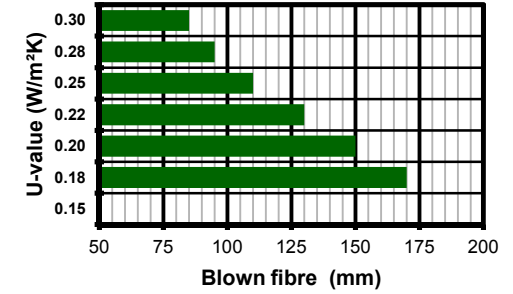
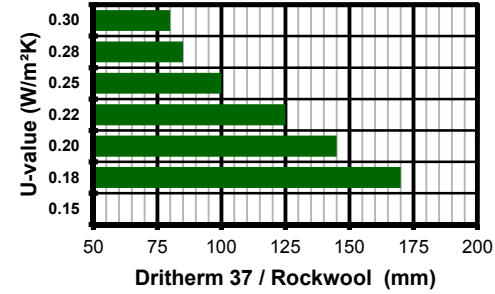
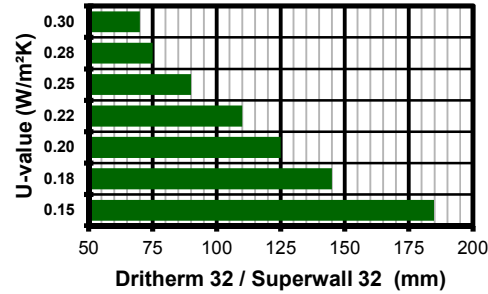
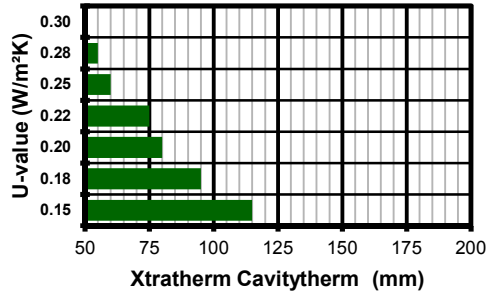


Brick outer leaf - Fully filled cavity - 140mm thick inner leaf

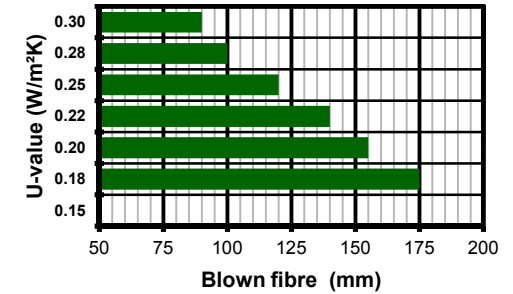
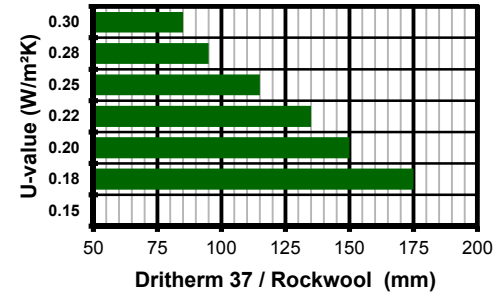
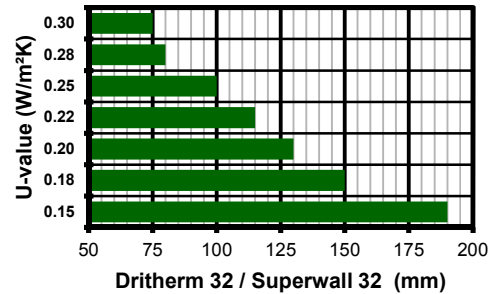
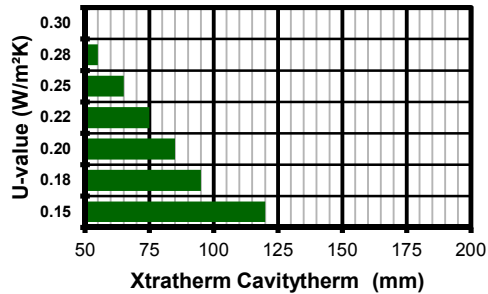
140mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



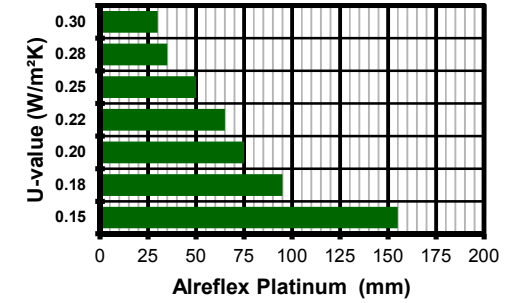
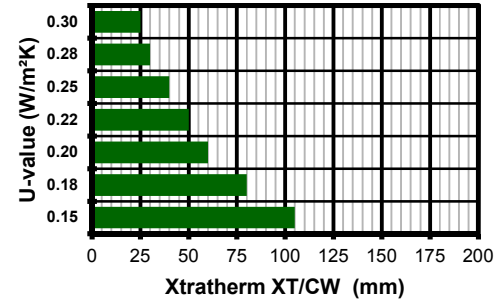
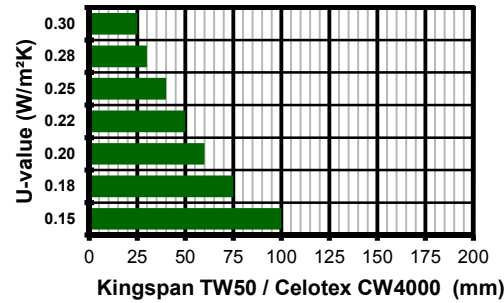
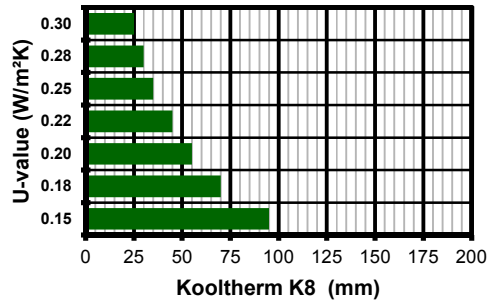
1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
2. Minimum 50mm cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
3. Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority.
4. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

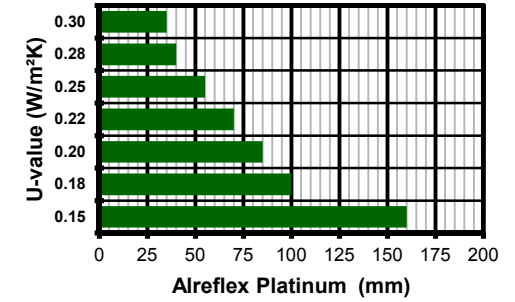
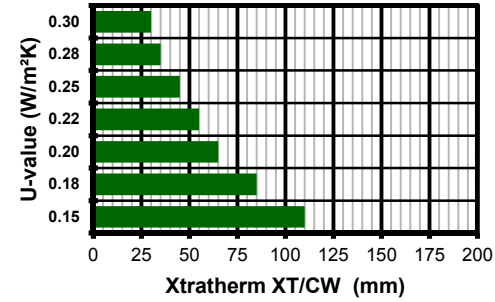
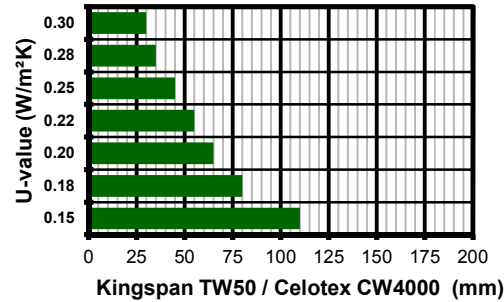
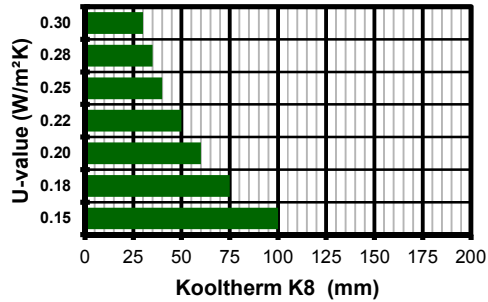


Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 100mm thick inner leaf

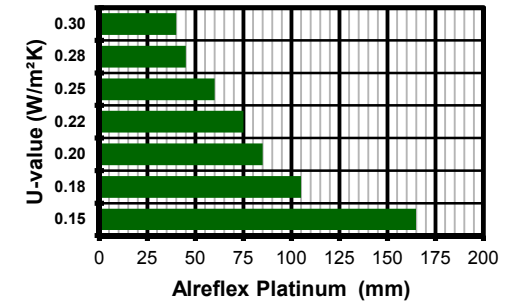
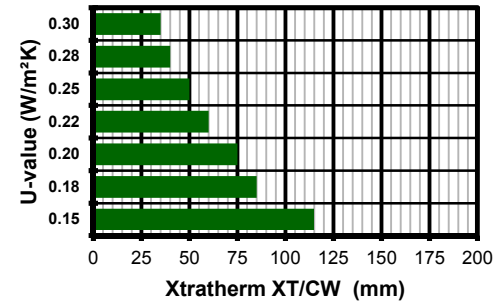
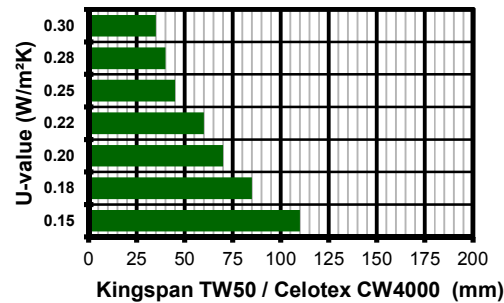
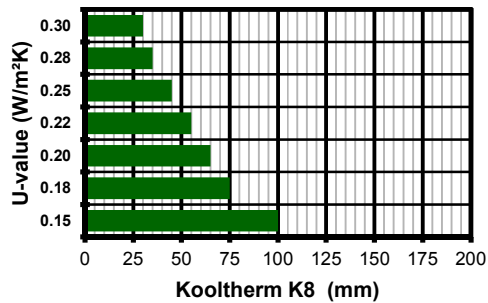
100mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



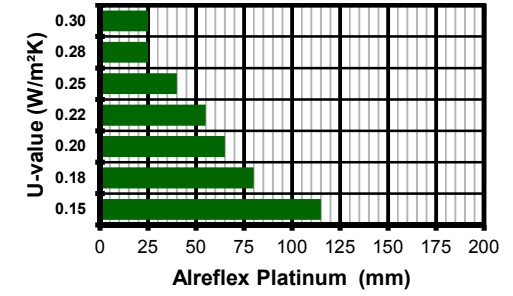
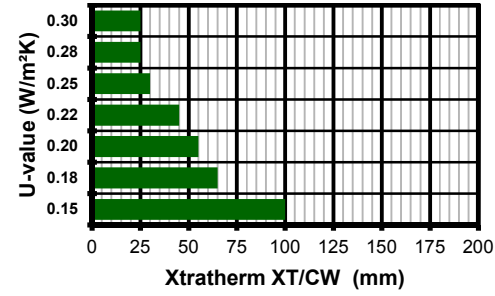
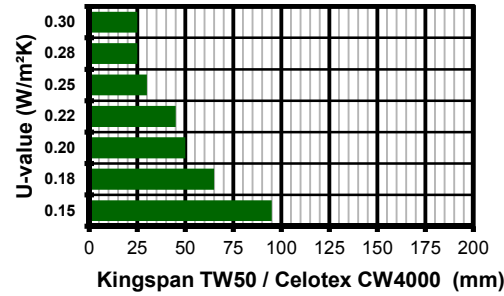
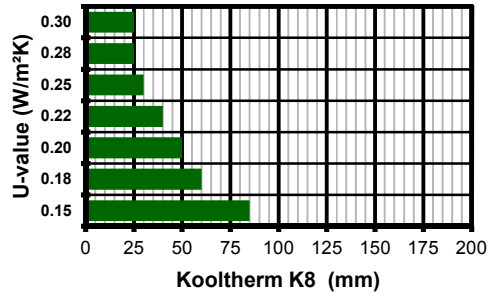
1. U-values calculated in accordance with BS EN 12526 for render, BRE Compendium for U-value calculations (Part 116) and BRE Special Digest 024.
2. Minimum 50mm clear cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
3. Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority. Consult H+H Technical Services for advice regarding render application.
4. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

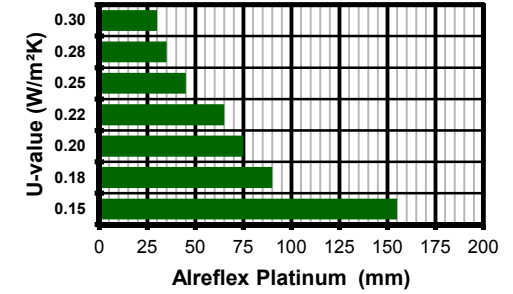
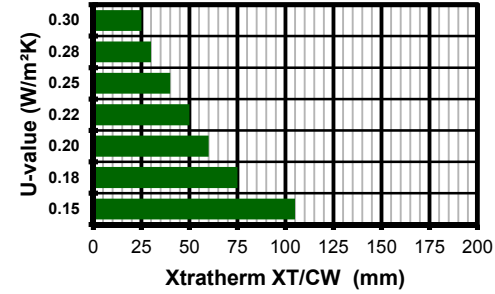
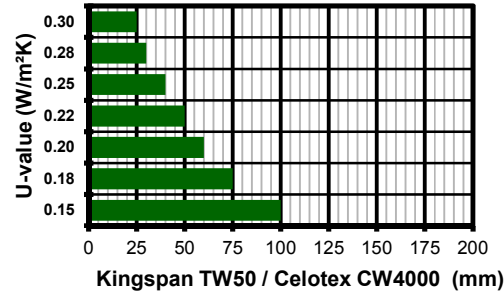
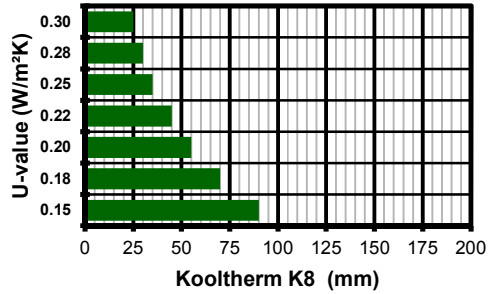


Rendered or clad 100mm Standard grade outer leaf - Partially filled cavity - 140mm thick inner leaf

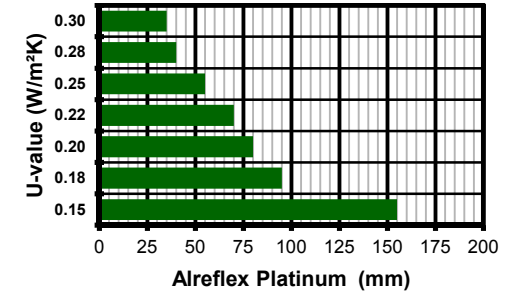
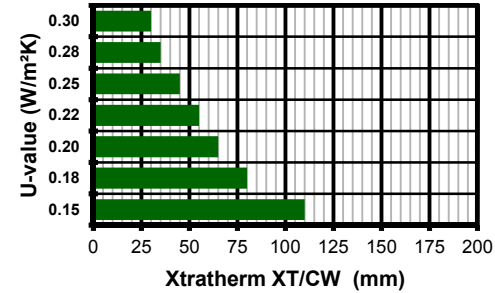
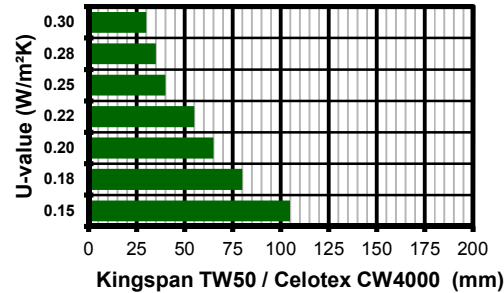
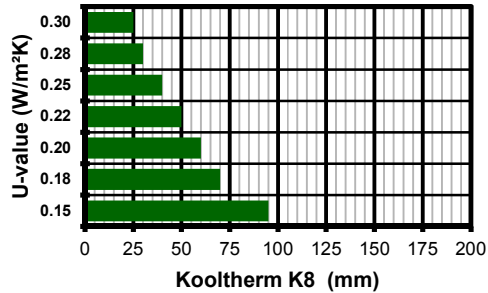
140mm Solar grade inner leaf leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



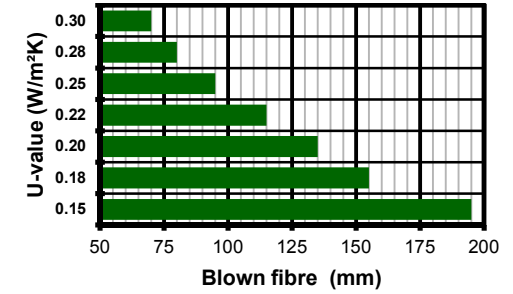
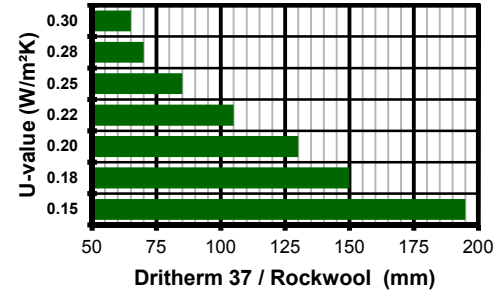
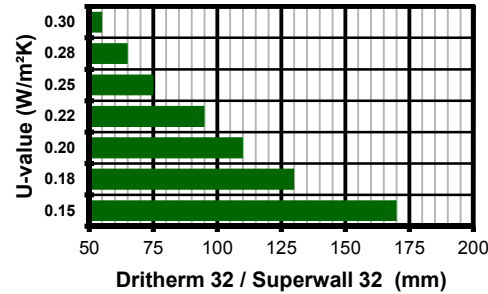
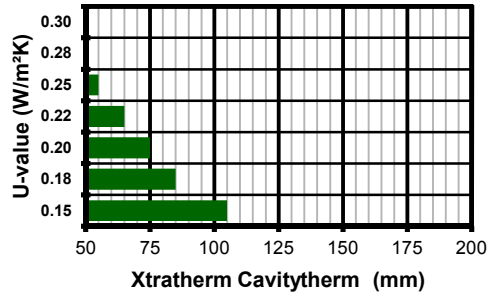
1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
2. Minimum 50mm clear cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
3. Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority. Consult H+H Technical Services for advice regarding render application.
4. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

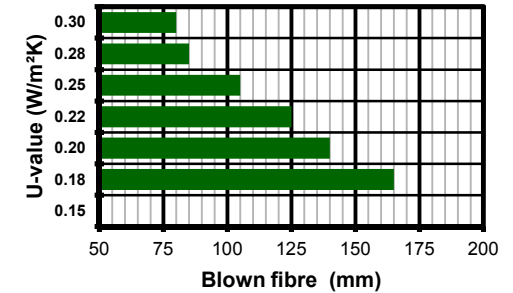
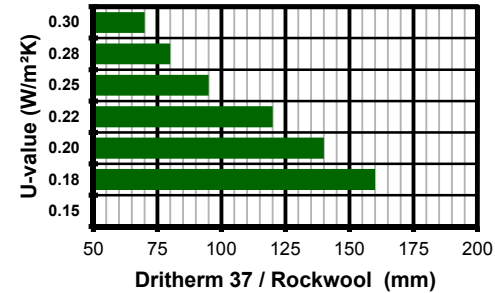
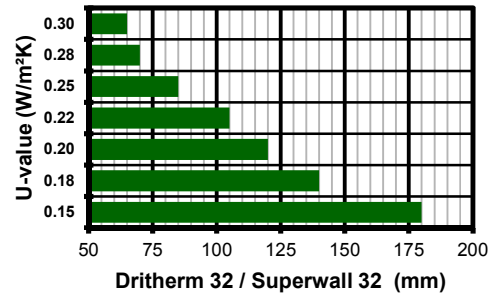
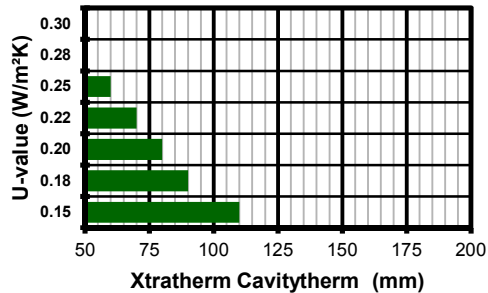
Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 100mm thick inner leaf



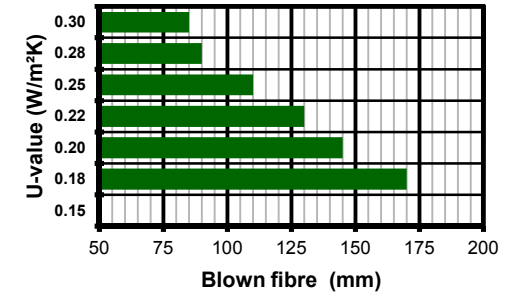
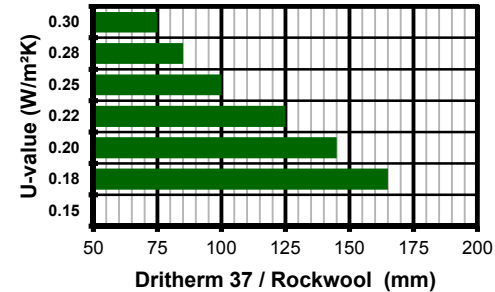
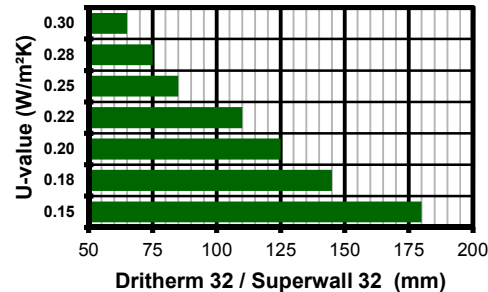
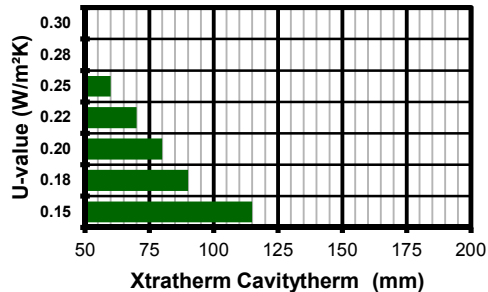
100mm Solar grade inner leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



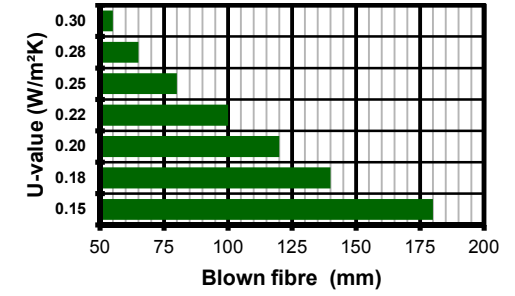
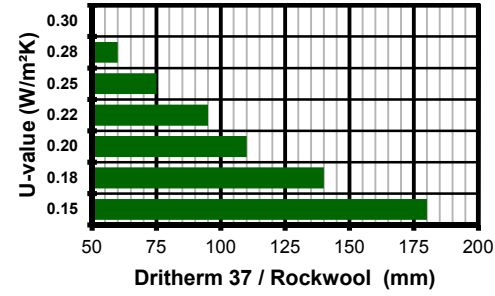
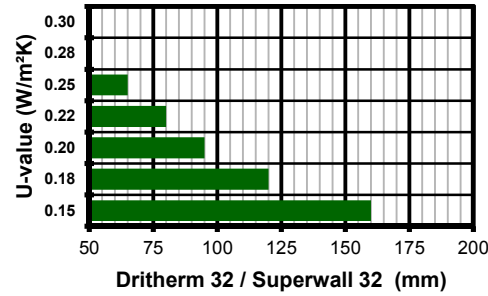
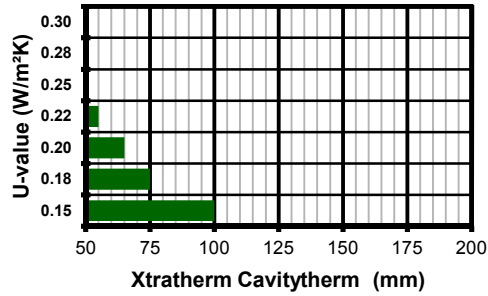
- All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
- Minimum 50mm cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
- Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority. Consult H+H Technical Services for advice regarding render application.
- Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
- H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Jumbo blocks (630mm x 250mm) in Celfix thin layer mortar

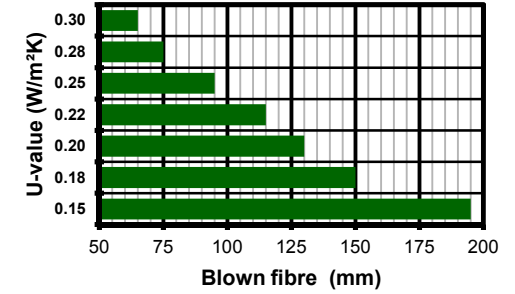
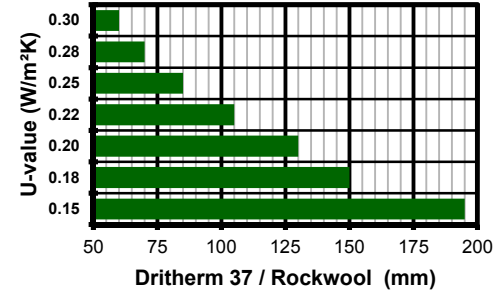
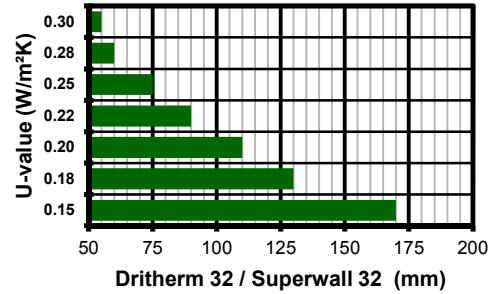
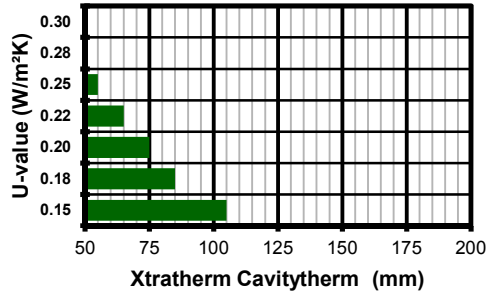


Rendered or clad 100mm Standard grade outer leaf - Fully filled cavity - 140mm thick inner leaf

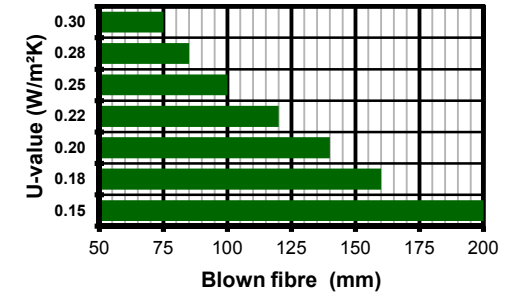
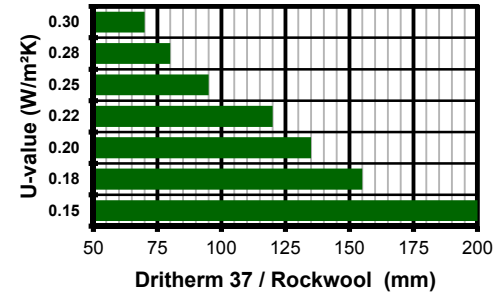
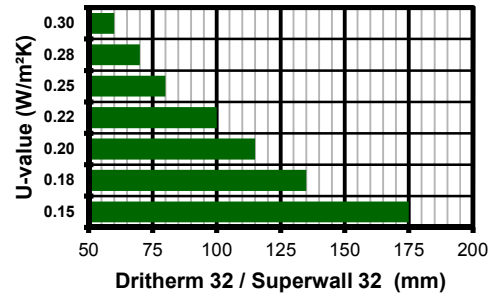
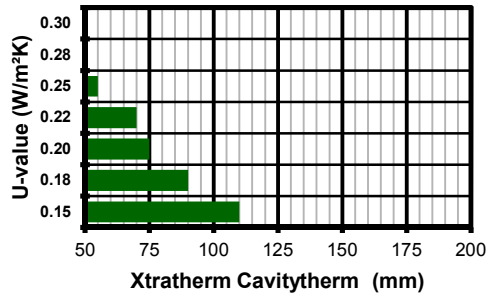
140mm Solar grade inner leaf



100mm Standard grade inner leaf



100mm High or Super Strength grade inner leaf



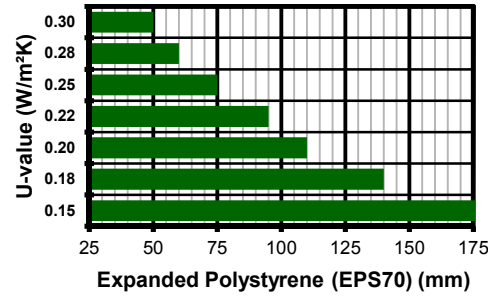
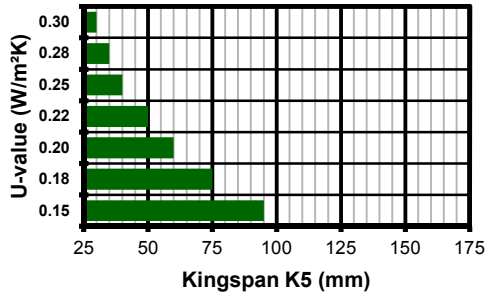
1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
2. Minimum 50mm cavity assumed with stainless steel wall ties at appropriate diameters for cavity width. Dense plaster internal finish taken as a worst case, lightweight plaster or plasterboard on dabs may also be used.
3. Exposure conditions may dictate greater cavity widths than indicated above, suitability of chosen insulation should be confirmed by Building Control authority. Consult H+H Technical Services for advice regarding render application.
4. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
5. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products.

External wall U-values - Plus blocks (630mm long x 215 or 140mm high) in Celfix thin layer mortar

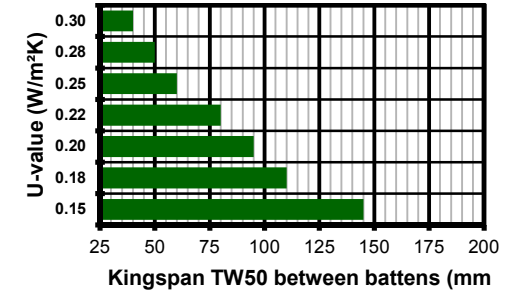
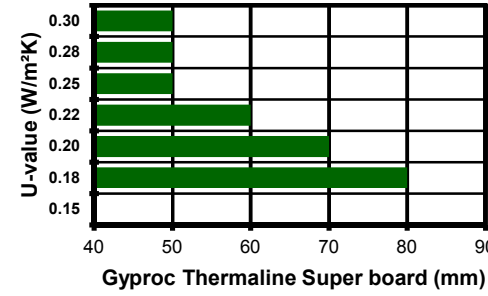


Rendered or clad 215mm thick solid wall

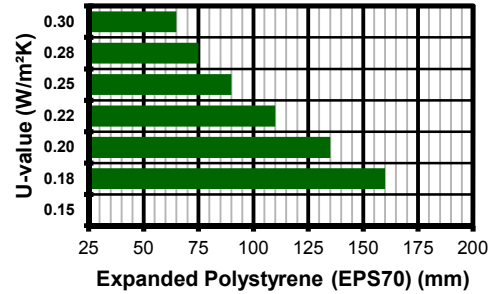
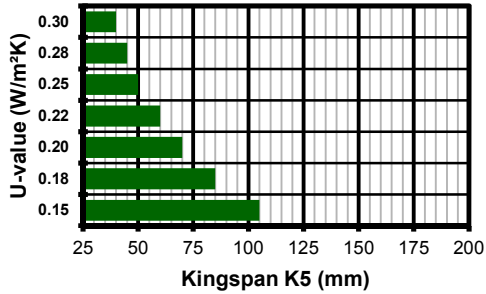
Solar grade - external insulation



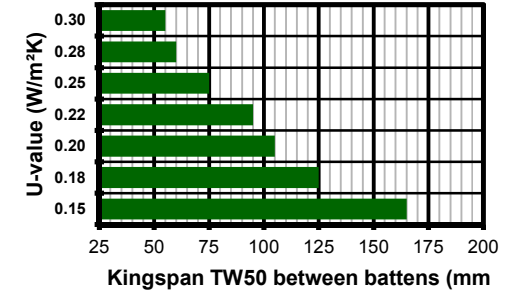
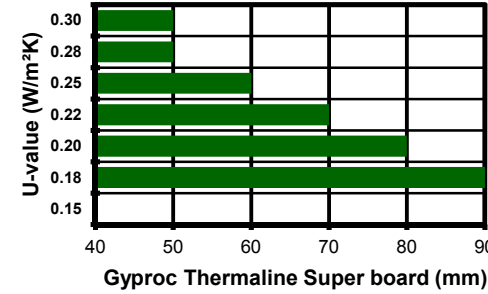
Solar grade - internal insulation



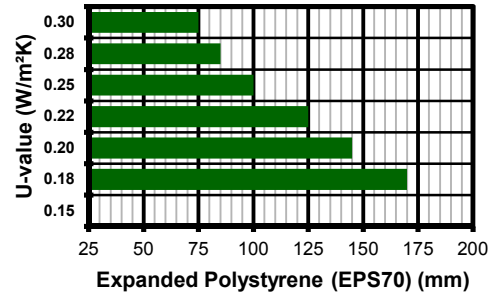
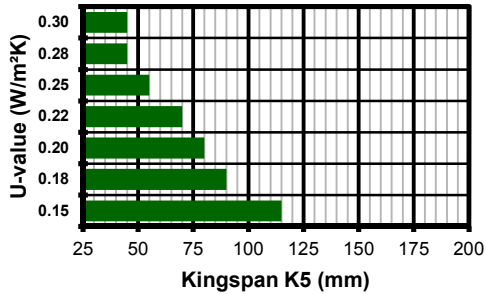
Standard grade - external insulation



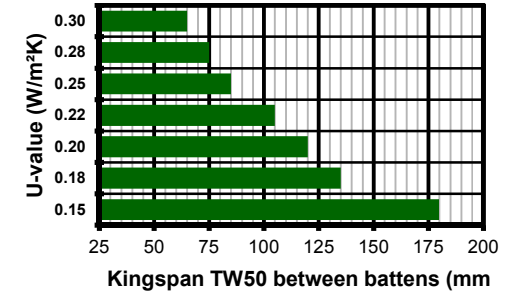
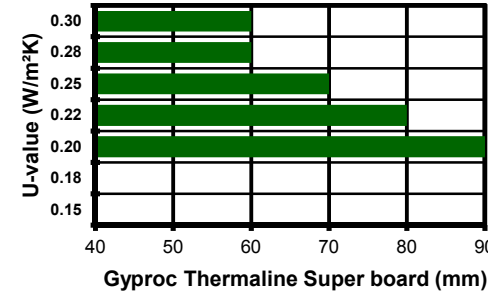
Standard grade - internal insulation



High or Super Strength grade - external insulation



High or Super Strength grade - internal insulation



1. All U-values calculated in accordance with BS EN ISO 6946:1997, BRE Conventions for U-value Calculations (BR 443) and BRE Special Digest SD4.
2. 215mm high Solar grade blocks assumed. High Strength and Super Strength assumed as 140mm high.
3. Above U-values are not exhaustive and are meant to give indicative thickness of insulation required for common U-values. Availability of actual thicknesses of insulation should be confirmed with manufacturer.
4. H+H Technical Services will be happy to calculate specific U-values for known requirements and insulation products. Consult H+H Technical Services for advice regarding render application.