Plasmor

CONCRETE PRODUCTS

Preliminary Sustainability & Climate Change Summary

Residential development at Doncaster Road, Darfield

Completed by: Leanne Brooksbank

Accreditation No: T370-0001

Summary

This development is a joint venture scheme whereby more than one developer will construct the new homes on the site at Doncaster Road with Saul Homes constructing over 450no in total over various phases.

The acceptable levels of carbon dioxide emissions for this site can be determined through each dwellings Dwelling Emission Rate calculated in SAP against its Target Emission Rate. Current Building Regulations requires a dwelling to be targeted against:

- Dwelling Emission Rate (DER) expressed in kg/CO_2/m^2/year
- Dwelling Fabric Energy Efficiency (DFEE) measured in kWh/m^2/year
- Dwelling Primary Energy Rate (DPER) in kWh/m^2/year

The target for each of the above is determined by a notional dwelling built to the same type, size and shape and featuring the notional dwelling specification listed in Part L 2021 of the Building Regulations. This then becomes the target that the dwelling cannot exceed.

To tackle the Energy efficiency & Renewable energy requirements for the site the following specification will be used:

SPECIFICATION – PART L BUILDING REGULATION 2021

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Preliminary specification for development at Doncaster Road, Darfield

External wall:	Brick 150mm Insulation 32 (K = 0.032) 100mm Plasmor Aglite Plasterboard on dabs Plaster skim U-Value = 0.18W/m^{2}K
Wall to garage (if solid):	100mm Plasmor Aglite 150mm Supafill 32 (K = 0.032) 100mm Plasmor Aglite Plasterboard on dabs Plaster skim U-Value = 0.18W/m^{2}K
Dormer & stud walls:	100mm Insulation (K = 0.022 Kingspan, Celotex, Unilin) between rafters 50mm Insulation (K = 0.022 Kingspan, Celotex, Unilin) below rafters 12.5mm Plasterboard U-Value = 0.16W/m^{2}K
Ground floor:	As per Stylite specification u-value 65mm Screed 205mm Stylite Plustherm 70 K=0.030 Beam and block or solid concrete slab U-Value = 0.12W/m^{2}K Or 65mm Screed 150mm Insulation (K=0.022 Kingspan, Celotex, Unilin) Beam and block or solid concrete slab U-Value = 0.12W/m^{2}K
Exposed floor:	Chipboard 200mm Mineral Wool K=0.040 between joists 25mm Thermal Plasterboard Plasterboard U-Value = 0.17W/m^{2}K
Plane roof:	All house types 250mm Mineral Wool K=0.040 over joists 250mm Mineral Wool K=0.040 between joists Plasterboard

	Plaster skim U-Value = 0.08W/m²K
Sloped roof:	50mm cavity within rafters 100mm Insulation (K = 0.022 Kingspan, Celotex, Unilin) between rafters 50mm Insulation (K = 0.022 Kingspan, Celotex, Unilin) below rafters 12.5mm Plasterboard Plaster skim U-Value = 0.16W/m²K
Doors:	To achieve U-Value of 1.1W/m^2K
Windows:	To achieve U-Value of 1.1W/m^2K
Heating system:	Gas heating system to be installed To radiators & underfloor heating
Heating controls:	Time and Temperature Zone Control
Hot water:	From combi or cylinder (dependant on house size) – size, make and model to be confirmed. Cylinder to have: Primary pipework insulated Cylinder stat Water heating timed separately And to be in heated space
Showers (flow rate):	9 litres/min From hot water cylinder or combi
Air pressure:	To achieve a design figure of 4.0m^3/hm^2
Ventilation:	Natural with extract fans
Efficacy of all fixed lighting:	Minimum 80lm/W
Lintels:	Hi-therm lintels or equal installed throughout
Thermal bridging:	Calculated in SAP 10 based on the use of independently assessed & Plasmor calculated junction details.
Renewable Technology:	2.5kW of Photovoltaic Panels fitted to the roof
Photographic evidence:	Requirement to provide evidence as detailed in Appendix B of Part L 2021
Part O (Overheating):	All dwellings subject to Part L 2021 are required to show compliance to Part O – Overheating.
Carbon Emission Rate Reduction:	**Meets current Building Regulation requirements.**