



MORRISON HERSHFIELD

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**Re: Review of Quik-Therm Type 2 EPS Insulation in Above Grade Exterior Wall Applications**

The intent of this report is to support the use of Quik-Therm's Type 2 EPS insulation to provide thermal resistance, air leakage control, and vapour diffusion control in exterior insulated steel frame assemblies. Quik-Therm's Type 2 EPS insulation is recognizable by the label on the bundle packaging.

Quik-Therm's Type 2 EPS insulation and may be used for exterior insulated steel frame walls where the stud cavity is left empty. In general, exterior insulated walls provides many advantages over interior insulated and split insulated steel frame walls, including improved thermal performance by minimizing thermal bridging of steel studs and transitions. Minimizing thermal bridging makes more effective use of the thermal resistance of the insulation to provide a higher effective R-values for the assembly. Exterior insulated wall assemblies also have better hygrothermal performance particularly in cold climates, where interstitial condensation is minimized due to warmer sheathing temperatures. This decreases the risk of moisture accumulation via vapour diffusion and exfiltration on the exterior sheathing. The benefits that Quik-Therm Type 2 EPS insulation can offer to exterior insulated steel stud wall assemblies are outlined below:

**Thermal Performance**

- The thermal resistance of the Type 2 EPS insulation has been tested as R-4.04 per inch (Thermal resistance of EPS is stable over time and does not need to be discounted to a lower LTTR value)
- In the absence of specific assembly testing the recommended method of assessing the effective U-value of steel frame assemblies is Table A3.3. of ASHRAE 90.1. This provides an effective assembly R-value of R-19 for an exterior insulated steel frame wall assembly with steel studs spaced at 16" o.c. and 4" of Type 2 EPS insulation without penetrations, excluding fasteners.

**Vapour Control**

- Quik-Therm Type 2 EPS insulation is effectively impermeable to water vapour (0.095 US perms (0.07 ng/Pa.s.m). In an all exterior insulated assembly there is no need for an additional vapour barrier.

### Weather Barrier

- With proper detailing Quik-Therm Type 2 EPS insulation may be used as part of the weather barrier.

### Air Barrier

- Quik-Therm Type 2 EPS insulation is impermeable to air and may be used as part of the air barrier system. However, proper detailing is required to ensure air barrier continuity at transitions and between adjacent assemblies. The insulation must also be properly supported to be part of an effective air barrier.

Yours truly,  
Morrison Hershfield Limited

  
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