CMGT 235 – Mechanical and Electrical Systems

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| R-Value Practice Problems |  |

1. Using the R-Value Lookup Table determine the U-Factor for the 2x4 Wall Assemblies below. Use Winter Conditions.

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| **R-VALUE for 2x4 WALL at STUD AREAS** | |
| **Component** | **R-Value** |
| Inside Air Film |  |
| 5/8" Gypsum Board |  |
| 2x4 Nominal (3 1/2") Stud Framing |  |
| 1x4 Nominal (3/4") Horizontal Sheathing Boards |  |
| 1/2" Plywood Sheathing |  |
| 60 Min. Building Paper |  |
| 1/2" Cedar Bevel Lapped Siding |  |
| Exterior Air Film |  |
| TOTAL R-VALUE (STUD WALL AREA) |  |
| U-FACTOR |  |

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| **R-VALUE for 2x4 WALL at CAVITY AREAS** | |
| **Component** | **R-Value** |
| Inside Air Film |  |
| 5/8" Gypsum Board |  |
| Cellulose Blown Insulation |  |
| 1x4 Nominal (3/4") Horizontal Sheathing Boards |  |
| 1/2" Plywood Sheathing |  |
| 60 Min. Building Paper |  |
| 1/2" Cedar Bevel Lapped Siding |  |
| Exterior Air Film |  |
| TOTAL R-VALUE (STUD WALL AREA) |  |
| U-FACTOR |  |

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| **R-VALUE for 2x4 WALL at CAVITY AREAS** | |
| **Component** | **R-Value** |
| Inside Air Film |  |
| 5/8" Gypsum Board |  |
| Fiberglass Blown Insulation |  |
| 1x4 Nominal (3/4") Horizontal Sheathing Boards |  |
| 1/2" Plywood Sheathing |  |
| 60 Min. Building Paper |  |
| 1/2" Cedar Bevel Lapped Siding |  |
| Exterior Air Film |  |
| TOTAL R-VALUE (STUD WALL AREA) |  |
| U-FACTOR |  |

A close up of a map

Description automatically generated

A person standing in front of a building

Description automatically generated