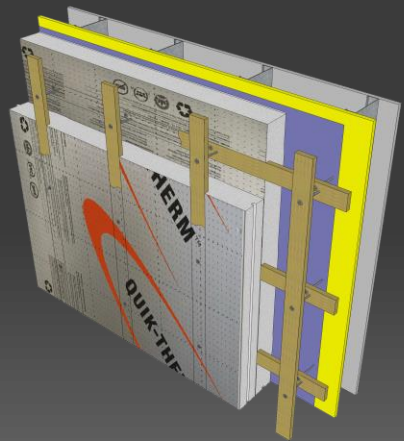
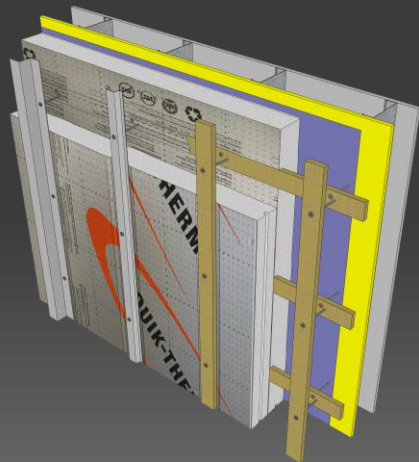


MATRIX INSULATION SYSTEM

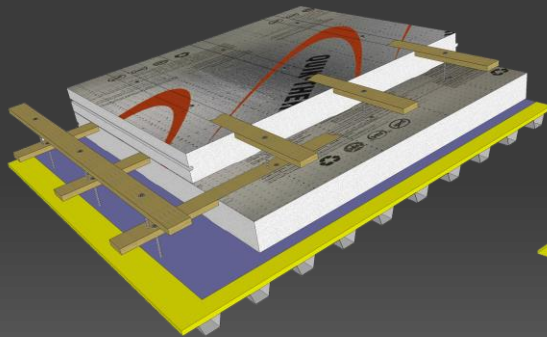
Composite Rigid Foam Insulation and Weatherization Technology



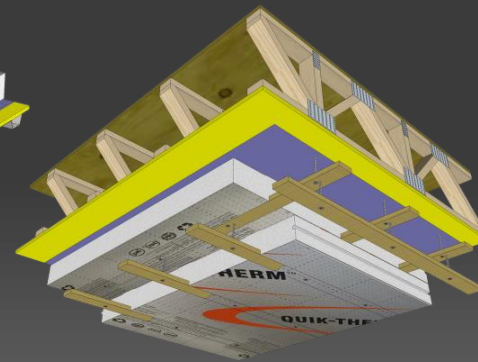
Matrix
(Walls)



Matrix^{RS}
(Rainscreen Walls)



Matrix
(Roofs)



Matrix
(Floors / Soffit)

The information in this guide is based on data considered accurate. Quik-Therm Insulation Solutions Inc. does not assume any responsibility for any misrepresentation or assumptions the reader may formulate



INTRODUCTION



WHAT IS MATRIX



PROFILE SELECTION



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INTRODUCTION



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RELATED LINKS

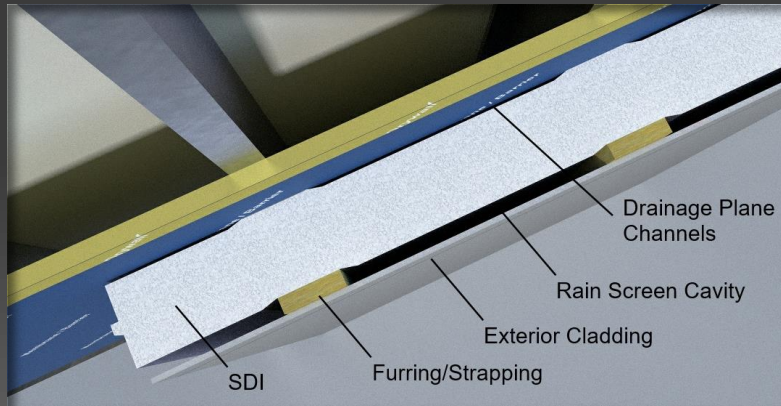
[ADC OVERVIEW](#)

[SDI OVERVIEW](#)

[ADC TECH SHEET](#)

[SDI TECH SHEET](#)

Solar Dry (SDI)

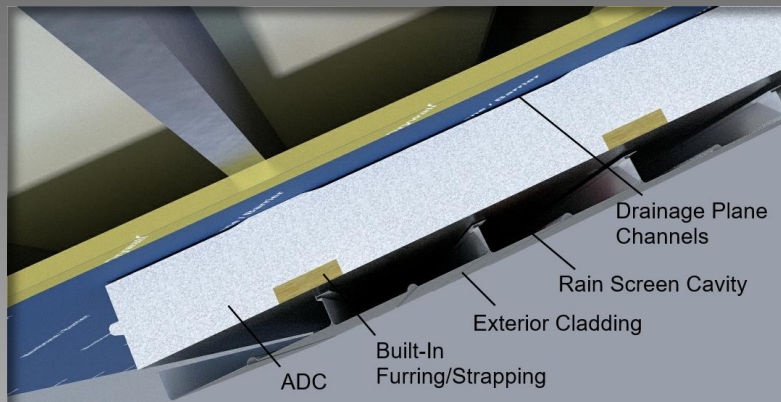


Description: Quik-Therm Solar Dry Insulation (SDI): Type II closed cell expanded polystyrene (EPS) with perforated metalized polymer facers. Inboard facer includes drainage channels for 75% panel surface area. Outboard facer includes shallow depressions to identify areas where furring strips are to be installed.

Benefits of SDI:

- Field applied furring provides a built out rainscreen with cladding.
- SDI is a vented and perforated outboard continuous rigid insulation.
- Manages vapour diffusion and channels bulk water to the outside.
- Offers superior moisture mitigation that prevents water getting trapped and held between the components of the wall assembly.

Air Dry Connect (ADC)



Description: Quik-Therm Air Dry Connect (ADC): Type II closed cell expanded polystyrene (EPS) with perforated metalized polymer facers and embedded 3/4" x 3" x 8' plywood strapping. Inboard facer includes wide drainage channels for 75% panel surface area. Outboard facer includes plywood battens embedded into the insulation panels 400 mm on centre, and hermetically sealed in place with permeable metalized polymer facer.

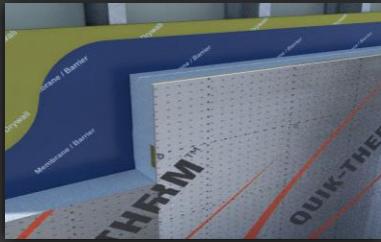
Benefits of ADC:

- Where cladding profile offers inherent rainscreen, ADC plywood furring offers a simple solution for cladding installation eliminating added materials and labour.
- ADC is a vented and perforated outboard continuous rigid insulation -Manages vapour diffusion and channels moisture to the outside.
- Offers superior moisture mitigation - prevents moisture getting trapped and held between the components of the wall assembly.

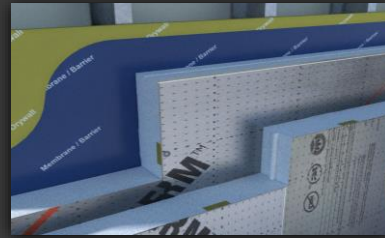


WHAT IS MATRIX

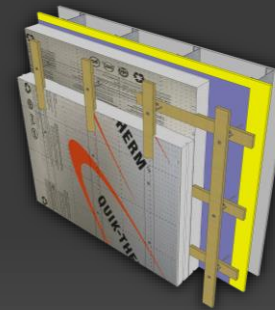
Cladding Inherent Rainscreen



ADC Base Layer

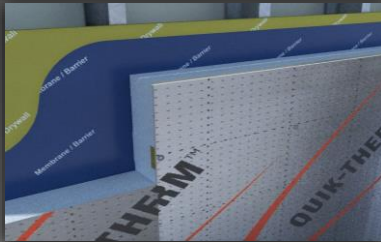


ADC Outer Layer



Matrix

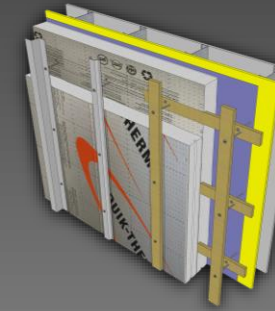
Strapped Rainscreen



ADC Base Layer



SDI Outer Layer + Furring



Matrix_{RS}

Watch the Matrix Overview Video



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[TECHNICAL DATA](#)

RELATED LINKS

[MATRIX TECH SHEET](#)

[MATRIX ROOF INSTALL GUIDE](#)

[ADC WALL INSTALL GUIDE](#)

[ADC 3-PART SPEC](#)



Matrix System



MATRIX PROFILE SELECTION

Are any of the following TRUE for the Project:

Dead weight of cladding is more than 12 psf

Project requires more than 12" thick insulation

Project is considered fully non-combustible assembly

Project is over 3 Storeys

Project cladding is adhered stone or masonry

Project has low slope roofing (1/12, 2/12)



YES



Your Project Will Require
Specific Engineering

Contact Quik-Therm

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Ryan Cullen

Technical Representative

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Jesse Watson

Specification Writer

(204) 841-0176

jese@quiktherm.com

Proceed to System Selection



WALL



ROOF



FLOOR



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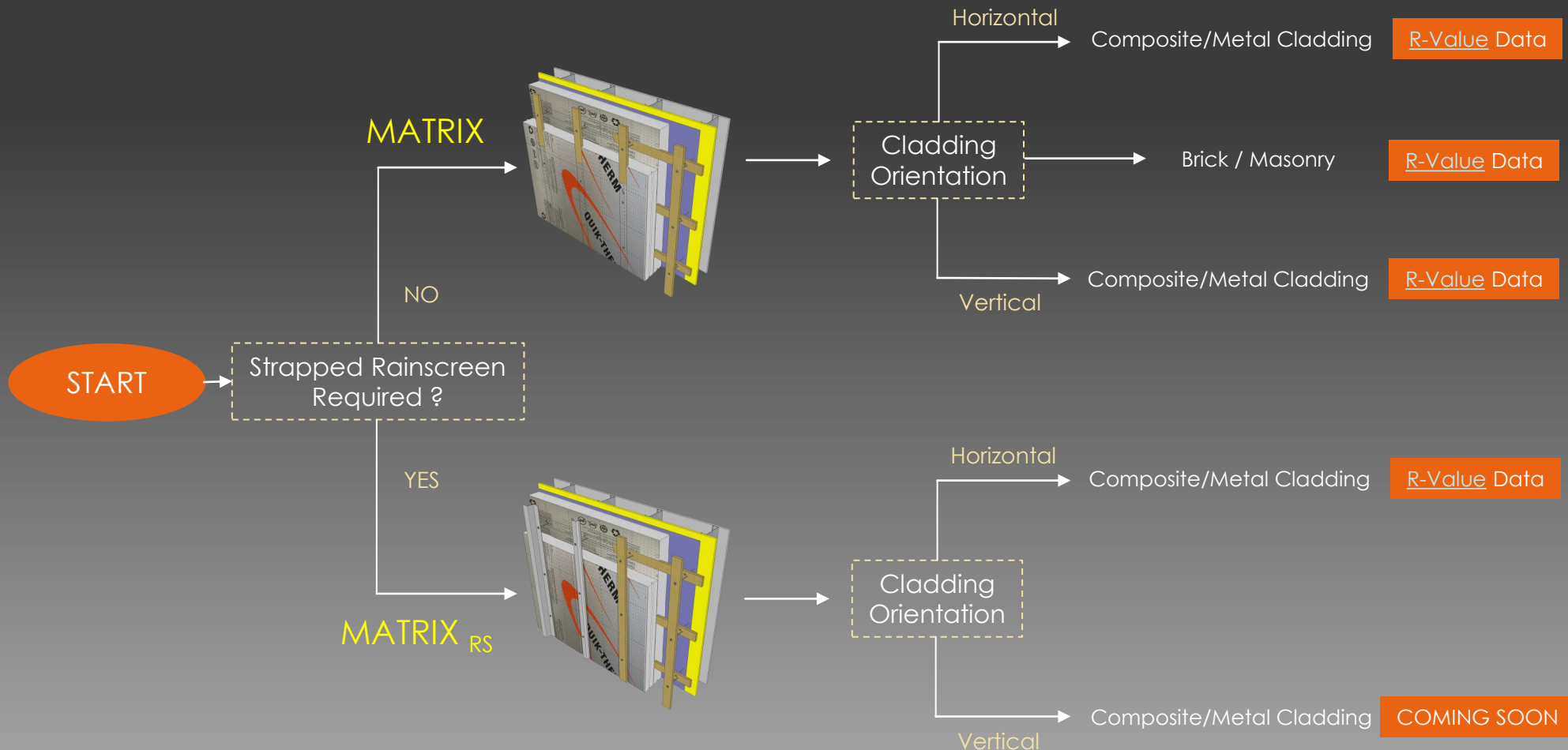
TECHNICAL DATA



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MATRIX PROFILE SELECTION - WALLS



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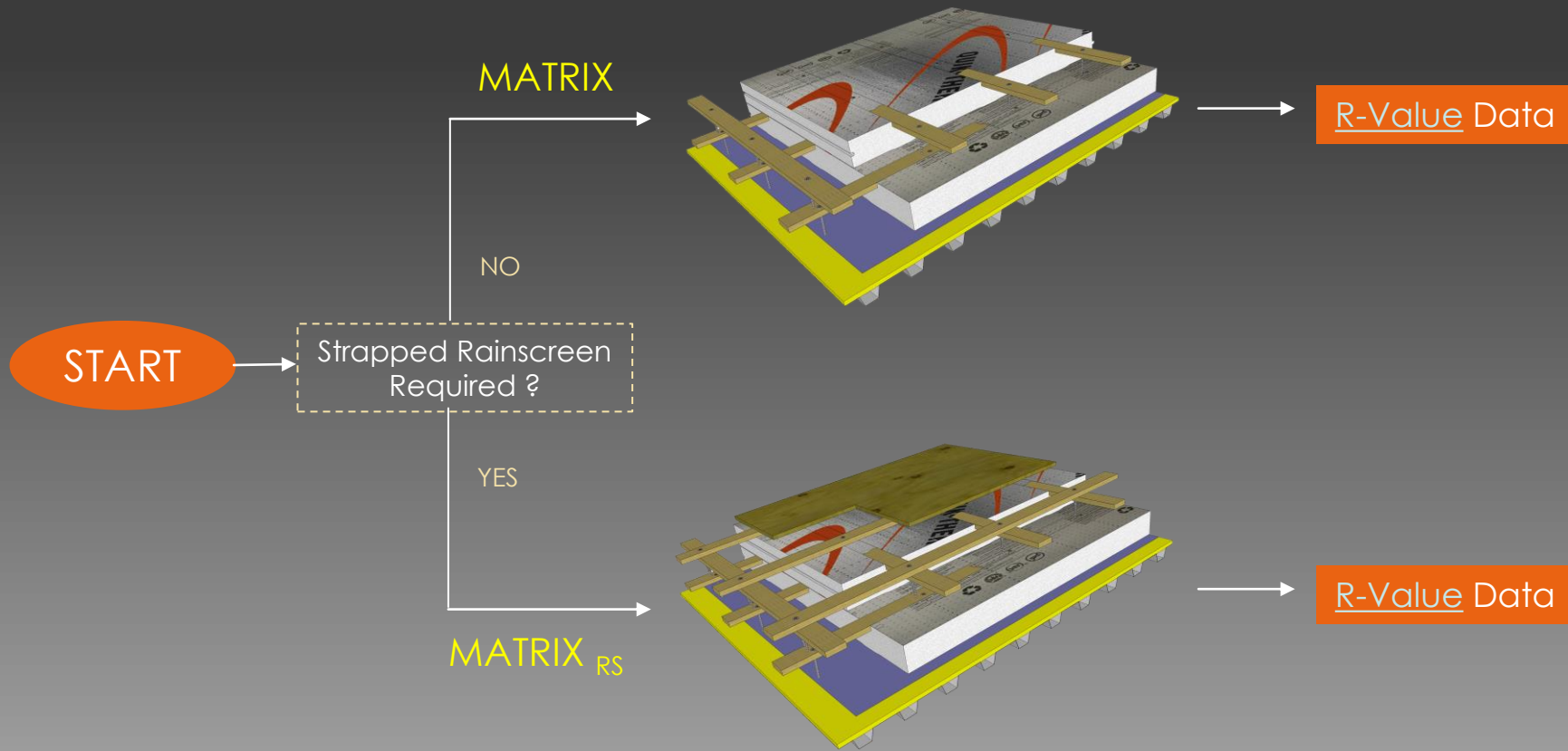
TECHNICAL DATA



Matrix System



MATRIX PROFILE SELECTION - ROOFS



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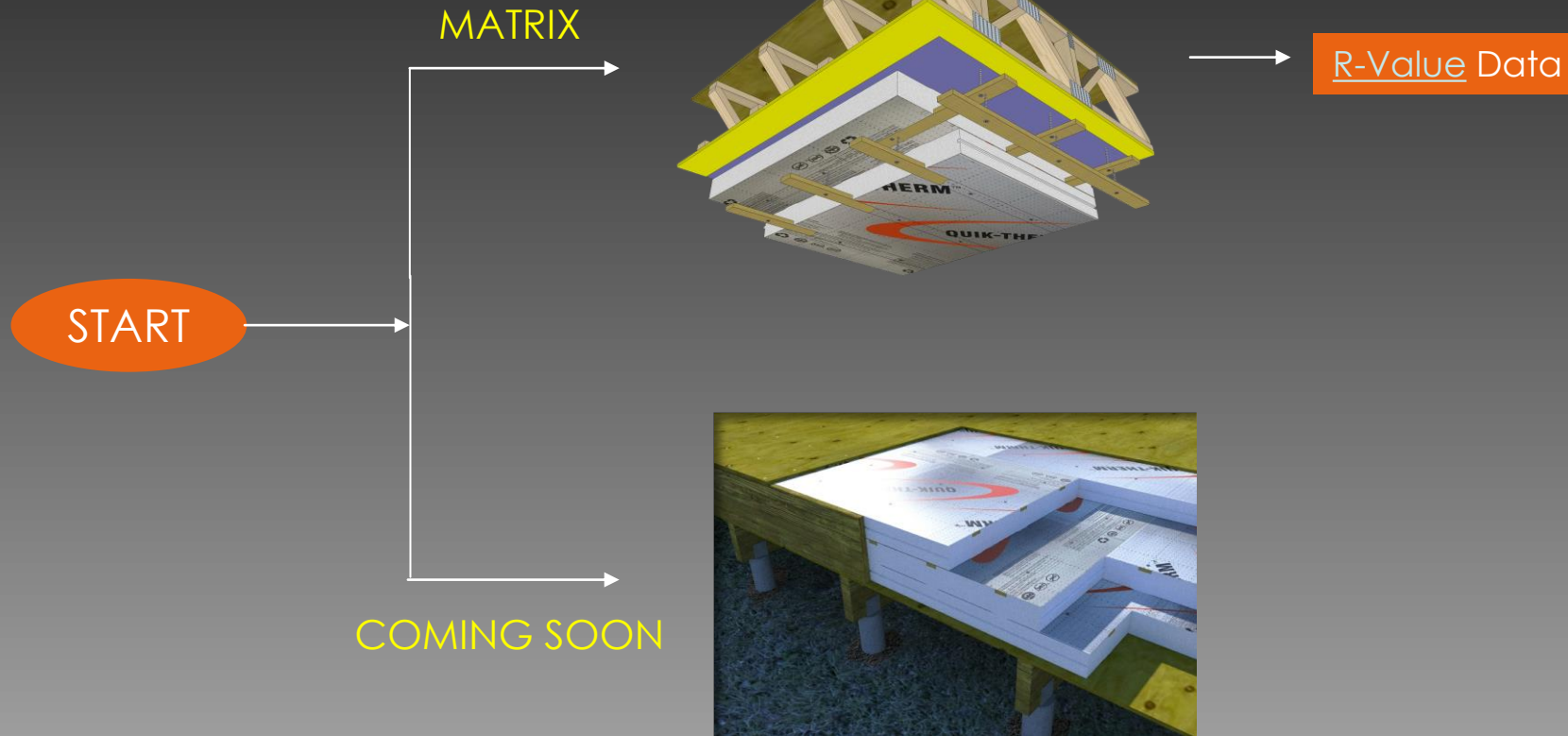
TECHNICAL DATA



Matrix System



MATRIX PROFILE SELECTION - Floors



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REFERENCE LIBRARY



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Matrix System



TECHNICAL DATA



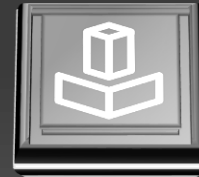
THERMAL



FIRE RATING



MOISTURE



STRUCTURAL



DESIGN
PRINCIPLES



INSTALLATION



REFERENCE
LIBRARY



RENDER LIBRARY



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WHAT IS MATRIX



PROFILE SELECTION



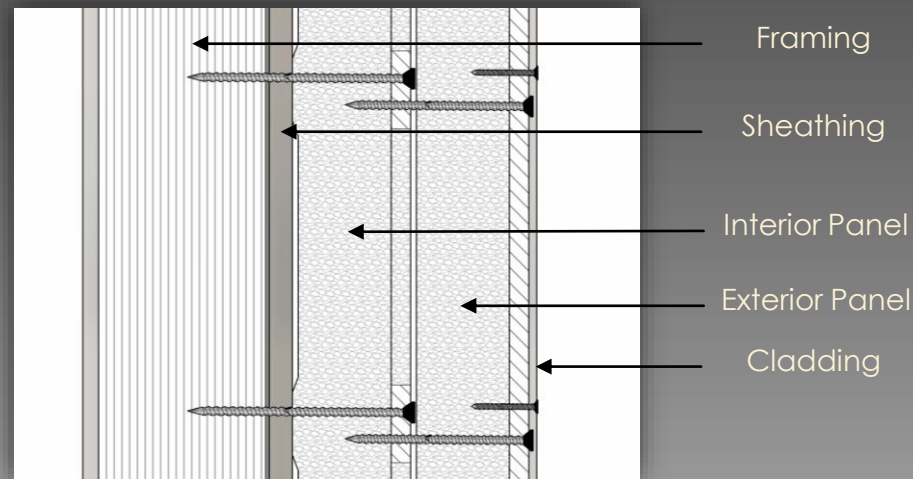
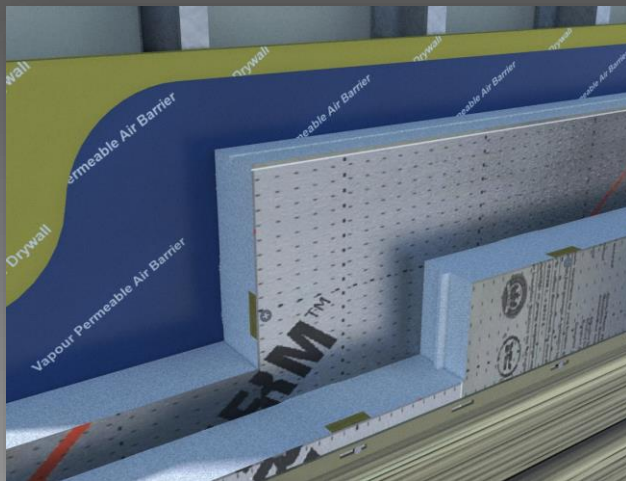
Matrix System



THERMAL PRINCIPLES

As wall assemblies continue to get thicker and more complex, consideration must be given to more than just design.

Unlike conventional insulation systems, Matrix Insulation Systems are virtually thermal and fastener point bridge free. There is no direct thermal conduction from the outside to the inside. As a result, there is no loss in R-value performance ([as validated per Morrison Hershfield BETB Guide](#)).



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RELATED LINKS

[MH BETB MATRIX SYSTEM EFFECTIVE R-VALUE](#)

[BE THERMAL ANALYSIS](#)

[QT NOMINAL R-VALUE \(TYPE 2\)](#)



Matrix System



FIRE RATING

Quik-Therm Insulation is made with expanded polystyrene (EPS) which is a combustible product.

However, many designs can incorporate this system simply. Below are the assemblies where Quik-Therm fits from a fire perspective:

ROOF	Any roof assembly without height restriction	Code Reference
WALL	Most wall assemblies 3 storeys and under, assuming both combustible & non-combustible construction is allowed, and unprotected openings are 10% or greater (limiting distance).	Code Reference
WALL	Some wall assemblies between 3 and 6 storeys. Single layer Quik-Therm 6" thick w/ cement board cladding can be used. (QT passed CAN/ULC S101 Contact Ryan for test information)	Code Reference
	S101 Quik-Therm Matrix fire test coming soon. Until then, Matrix is ineligible for these assemblies.	
FLOOR	To be Determined	



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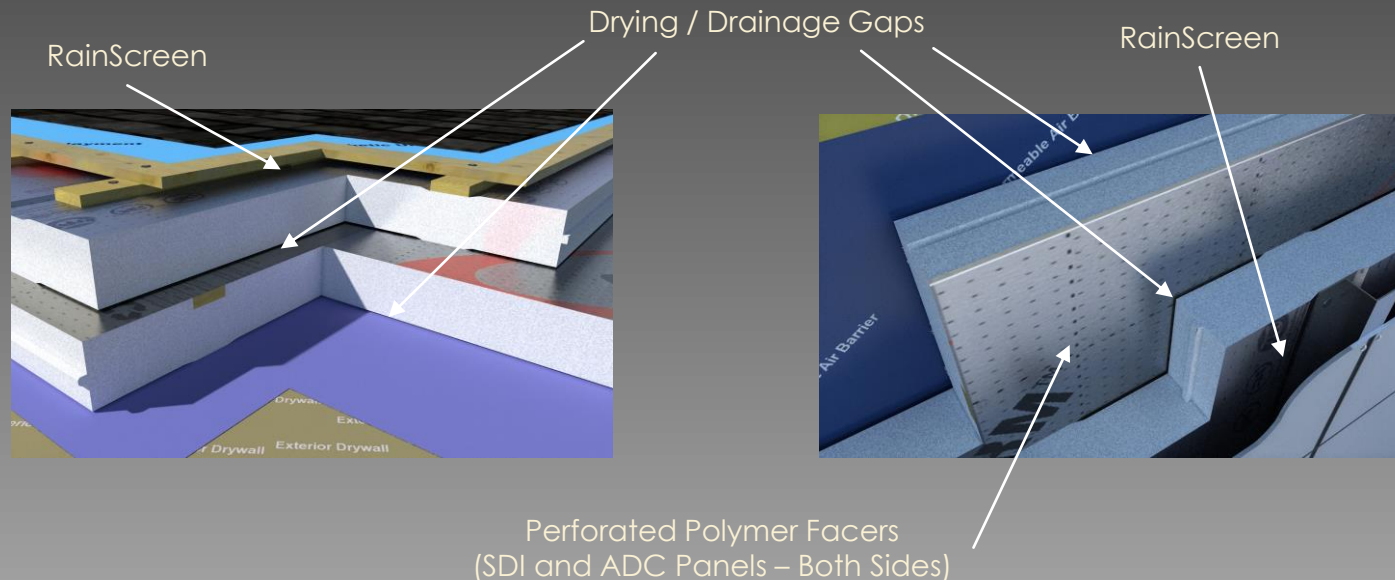
Matrix System



MOISTURE PRINCIPLES

Flat building materials commonly trap and/or create moisture between layers.

Trapped moisture not only reduces the effective R-value of the assembly, but it also creates an environment for material degradation and mold. Matrix Insulation Systems are self-drying — designed to drain/dry bulk water and manage vapour diffusion.



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RELATED LINKS

[M&H HYGROTHERMAL ANALYSIS](#)

[BE HYGROTHERMAL ANALYSIS](#)

[WATCH MATRIX DRAIN WATER](#)



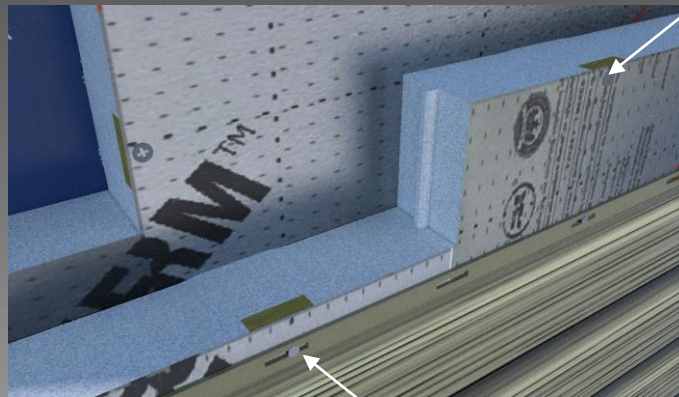
Matrix System



STRUCTURAL PRINCIPLES

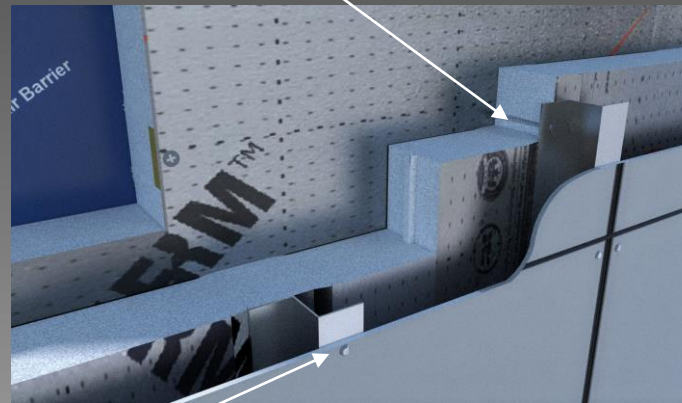
It can be difficult to add many layers of thick insulation, thermal clips, sub-girts, fasteners, weather barriers etc.

The Quik-Therm Matrix System is installed with two or more Quik-Therm panels and fasteners. The cladding is simply installed to the embedded battens or girt system.



Cladding Fastened to Outer Layer Battens/Girt System

Outer Layer Battens/Girt System Fastened to Inner Layer Battens



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RELATED LINKS

[MH STRUCTURAL ENGINEERING](#)

[LDA U2 STRUCTURAL FASTENER ENGINEERING](#)

[FASTENING SCHEDULE OVERVIEW](#)

[SOLAR DRY ENGINEERING](#)



Matrix System



DESIGN PRINCIPLES

Overall, Matrix is simple to design with. You need to consider your cladding type / orientation / fastening schedule and rainscreen requirements.

Matrix is well-suited for Industrial, Institutional, and Commercial projects. The following are some general design rules with links to associated images.

- 1 Try to keep all base layers of ADC horizontal. Installation is easier with this orientation. Vertical can be done, but with slightly more waste.
- 2 Horizontal Cladding = Vertical Outer QT Panel
Vertical Cladding = Horizontal Outer QT Panel
- 3 If a rainscreen is required replace outer ADC w/ SDI and appropriate orientation and strapping.
- 4 If cladding fastening schedule doesn't fit 16" OC embedded strapping, use SDI as outer layer and install vertical sub-girts to suit the cladding.

[Related Images](#)

[Related Images](#)

[Related Images](#)

Example situations where project specific engineering is required

Please contact ryanc@quiktherm.com

Non-typical installations – see Render Library

Cladding deadweight over 10lbs/ sqft.

Windloads exceeding xx

3 layers of ADC

Over 6 storeys in height



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RELATED LINKS

[3 PART SPECIFICATION - ADC](#)

[3 PART SPECIFICATION - SDI](#)

[CAD / REVIT LIBRARY](#)



Matrix System



INSTALLATION PRINCIPLES

Matrix is incredibly simple to install. The base QT panel is fastened to the structure at 16" x 16" OC fastening schedule. The outer QT panel is fastened to the base panel embedded 3/4" plywood strapping every 16" x 16" OC.

The following are some general construction rules:

- 1 Embedment of fastener into either structure or ADC plywood must be a minimum of 1-1/2" embedment.
- 2 #12 fasteners are required for most assemblies. For fasteners less than #12, project specific engineering is required.
- 3 Some projects will require exterior strapping to suit the cladding. In those scenarios use SDI for outer layer w/specified furring, fastened to ADC on inner layer. Alternatively, appropriate strapping can be installed to horizontal ADC for vertical strapping to suit cladding.
- 4 Matrix Roof assemblies require an 18ga C-Channel around the perimeter of the roof system. See linked Matrix Installation Guidelines for more details.
- 5 Matrix Roof assemblies require an air barrier membrane between Outer layer of ADC and SSR system. Minimum Acceptable Product: Tyvek. Recommended Product: FT Synthetic
- 6 Matrix Roof, Wall & Floor assemblies do not require taped seams. If you're using this product as the primary Air/Vapour Barrier please contact: ryanc@quiktherm.com

[Related Images](#)

[Related Images](#)

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RELATED LINKS

[U2 UNIVERSAL FASTENER DATA](#)

[U2 STEEL FASTENER DATA](#)

[CMU/CONCRETE FASTENER DATA](#)

[ADC INSTALL GUIDE](#)

[SOLAR DRY INSTALL GUIDE](#)



Matrix System



REFERENCE LIBRARY

Product Information

[Air Dry Connect](#)

[Solar Dry Insulation](#)

[Watch Matrix Drain Water \(Video\)](#)

[Adhered Membranes \(Test Video\)](#)

Technical References

[CCMC Type 2 Listing](#)

[Solar Dry Science & Engineering](#)

[SDI Structural Engineering](#)

[Matrix Structural Engineering](#)

[M&H Hygrothermal Analysis](#)

[BE Hygrothermal Analysis](#)

[BETB Guide – Matrix Wall](#)

Design Information

[Air Dry Connect Tech Data](#)

[Solar Dry Insulation Tech Data](#)

[3 Part Master Specification \(ADC\)](#)

[3 Part Master Specification \(SDI\)](#)

Fire Code Reference Links

[Roofs](#)

[Walls – Under 3 Storeys](#)

[Walls – Between 3 & 6 Storeys](#)

Drawings

[CAD / Revit Library](#)

[3D Render Library](#)

Thermal / Fire

[R-Value Performance](#)

[Thermal Data](#)

[QT Nominal R-Value \(Type 2\)](#)

[S101 Fire Test](#)

Installation References

[Fastening Schedule Overview](#)

[U2 Universal Fastener Data](#)

[U2 Canadian Fastener Engineering](#)

[U2 Steel Fastener Data](#)

[Concrete Fastener Data](#)

[ADC Install Guide](#)

[Solar Dry Install Guide](#)



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WHAT IS MATRIX



Matrix System



3D RENDER LIBRARY

Product Overviews

[Air Dry Connect](#)

[Solar Dry](#)

Typical Matrix Systems

[Walls](#)

[Matrix](#)
[Matrix RS](#)

[Roof](#)

[Matrix](#)
[Matrix RS](#)

[Floors](#)

[Matrix](#)
[Matrix RS](#)

Examples of Other Possible Matrix Configurations



WALL

[Vertical Cladding](#)

[ACM Panels c/w Rainscreen](#)

[Double Layer - Horizontal](#)

[Double Layer - Vertical](#)

[Brick Walls](#)

[Curved Surfaces](#)

[Triple Layer](#)



ROOF

[Mod - Bit Roof](#)

[Northern Climates - Effective R-60](#)

[Curved Roof](#)



FLOOR

[Northern Climates](#)



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