



## DESIGNING WITH COMMERCIAL/INDUSTRIAL INSULATED METAL WALL PANELS

This course focuses on design considerations when using commercial/industrial insulated metal wall panels. Panel characteristics, market segments, paint and textured finishes, coatings, design options including integration with other materials, interior wall finishes, flashings and extrusions are all reviewed. Supporting structure design including steel alignment/tolerances, pre-engineered buildings and panel spans are addressed. Functional considerations including environmental control layers (air, vapor, water and thermal) are examined. A full color animated video provides a step-by-step understanding of how IMPs are installed. Code compliance including air, water, thermal and fire safety is also addressed. The program concludes with product and installation warranties, including paint, corrosion and weather tightness.

(IMP006)

(IMP011)

## DESIGNING WITH ARCHITECTURAL INSULATED METAL WALL PANELS

This course focuses on architectural insulated metal wall panels. We review the characteristics that best describe architectural IMPs including the myriad design options available. Topics such as finishes and coatings, trimless ends, folded corners, variable reveals, segmented curves, running bond patterns, sunscreens and integrated windows are reviewed. Structural support considerations including stud walls and tube steel are studied, as well as the importance of maintaining proper wall alignment. The installation process is also reviewed using an animated video to provide step-by-step guidance. Air, water, vapor and thermal control layers are studied along with code compliance. Product and installation warranties are highlighted before wrapping up with a look at IMP sustainability and transparency.

## DESIGNING WITH COLD STORAGE INSULATED METAL PANELS

Understanding how insulated metal panels are used for cold storage facilities is critical to creating energy efficient and sustainable buildings. We start with basic definitions of cold storage, controlled environments and controlled atmospheres, then discuss the building science behind IMPs and why they are the preferred material for these facilities. From there we explore control layer continuity and the critical details needed to prevent unwanted condensation, ice formation and heat gain. Next we explain the differences between non-accessible, light/limited duty and walkable ceilings using IMPs, including engineering, safety and attic ventilation requirements. IMP substrates and paint finish characteristics are evaluated - essential topics when designing food processing areas. The program concludes with a review of the proper draw down process when commissioning a cooler or freezer.

(IMP013)

(IMP015)

## DESIGNING WITH INSULATED METAL ROOF PANELS

This course focuses on design considerations when using insulated metal roof panels. Panel characteristics, paint finishes and roof geometry options are reviewed. Support structure requirements (ex: purlins, joists, decking) including steel alignment/tolerances, panel spans and roof diaphragm considerations are studied. Functional aspects including environmental control layers (air, vapor, water and thermal) are examined. A full color animated video provides guidance on the step-by-step process of how IMP roofs are installed. Code compliance including air, water, thermal, fire safety and wind uplift is addressed. The program concludes with product and installation warranties, including paint, corrosion and weather tightness.

### **MINERAL WOOL CORE PANELS: INNOVATIVE, SUSTAINABLE, FIRE-RESISTIVE WALL CONSTRUCTION**

This program explains how mineral wool core insulated metal panels provide an excellent alternative to traditional fire-resistive materials. We learn about the advantages of mineral wool, how and why this product provides fire ratings of up to three hours, and how these panels provide all the necessary control layers (air, water, vapor and thermal) and exterior and interior finishes in a single component. The International Building Code requirements for fire protection are reviewed, including sizes, profiles and finishes are studied. The program concludes with a brief look at mineral wool IMP sustainability and transparency.

**(IFR004)**

**(IMP014)**

### **INSULATED METAL PANELS BARRIER WALL SYSTEMS**

The course provides an in depth look at the benefits on Insulated Metal Panels Barrier Wall Systems as a simpler and superior option to multiple component exterior wall assemblies. The program addresses the many challenges faced by multiple component wall assemblies; current energy code requirements; the influence of air, moisture, thermal and vapor are discussed; and actual insulated metal barrier panel case studies are reviewed. Videos and animations are used within a PowerPoint presentation to enhance the overall presentation. This program is an interactive session that encourages feedback and questions.

### **RAINSCREENS, BARRIER WALLS, AND THE IMP SOLUTION**

This course is designed to review the building science behind popular wall assemblies used in today's construction market, with an emphasis on rainscreens, barrier walls and insulated metal panels. We review the air, vapor and water management methods used by each type of assembly, the purpose of vapor retarders and barriers and the various materials used to establish these control layers. We also examine the use of IMPs as a replacement for traditional multi-component backup walls in rainscreen systems. The program also addresses how IMPs handle air, vapor, water and thermal management through the use of a single, factory assembled wall component. The program concludes with a review of the various code requirements including air barriers, water barriers and fire safety.

**(IMP005)**

**(IMP007)**

### **INSULATED METAL PANELS: THE "PERFECT" ENVELOPE SOLUTION**

We review the physics of building envelopes, including hygrothermal loads, control layers, climate zones and cladding functions. The importance of control layer continuity at wall, roof and slab connections is studied. We look at how IMPs perform the same functions as multi-component wall systems through the use of panels joints, sealants and an insulating core. Emphasis is placed on the concept of the "Perfect/Universal Wall", and how utilizing the proper ordering of wall components can greatly simplify wall design in all climate zones. Energy codes are also touched on, including their impact on the use of "Perfect/Universal Wall" designs. This course reduces a relatively complex subject to a level that teaches practical concepts for the building designer.

### **IMPs, EPDs, AND HPDs: SUSTAINABLE PERFORMANCE**

This program reviews the definition of sustainability, and how Environmental Product Declarations (EPDs) and Health Product Declarations (HPDs) are being used to address product transparency needs. We will review how IMPs provide all environmental control layers and how their use contributes to sustainable design. LCAs form the backbone of EPDs, and this course walks through the creation of EPDs as well as the environmental factors evaluated. HPDs are the latest tool used to study building product toxicity, and we will provide a complete review of how these important documents are prepared and used by owners, architects, designers and manufacturers. We finish up by studying how EPDs and HPDs are used in environmental rating systems such as LEED, Green Globes and Living Building Challenge.

**(IMP016)**