WONDERING IF CONSIDERING CONVENTIONAL STEEL OR HYBRID STEEL-TIMBER FLOOR SYSTEMS?

The following North American Steel and Hybrid Steel Mass Timber Structural Systems Report provides a comprehensive comparative study of steel and hybrid steel-mass timber floor and roof systems, considering embodied carbon, costs, and structural system depth.

The study covers both commercial and residential applications, evaluating a range of conventional and hybrid floor assemblies.

HOW DOES THE GWP OF CONVENTIONAL STEEL FLOOR SYSTEMS COMPARE TO THE GWP OF HYBRID STEEL-TIMBER FLOOR SYSTEMS?

Page 30 to 45 of North American Steel and Hybrid Steel Mass Timber Structural Systems Report illustrate GWP values for conventional steel and hybrid steel-timber floor systems for different bay sizes of typical office and residential floors.

WONDERING WHAT ARE THE COSTS TO CONSIDER IN CONVENTIONAL STEEL AND HYBRID STEEL-TIMBER FLOOR SYSTEMS?

Look at pages 59 to 71 of North American Steel and Hybrid Steel Mass Timber Structural Systems Report to find out!

HOW DOES THE FLOOR SYSTEM DEPTH VARY FROM A CONVENTIONAL STEEL ASSEMBLY TO A HYBRID STEEL-TIMBER ASSEMBLY?

Page 46 to 58 of North American Steel and Hybrid Steel Mass Timber Structural Systems Report show system depths for different floor assemblies and bay sizes, including topping slab and ceiling.

WHAT IF CONCRETE WITH A SUPPLEMENTAL CEMENTITIOUS REPLACEMENT IS USED IN LIEU OF TRADITIONAL CONCRETE?

Read pages 72 to 75 to check how incorporating low embodied carbon concrete influences the GWP of different floor assemblies.

WHAT ARE SOME ASPECTS TO EVALUATE WHEN CONSIDERING FIRE PROTECTION?

Although structural steel is a non-combustible material, timber is combustible and subject to code limitations. Check pages 8 to 11 of the Design and Construction Considerations Report to find out more about fire protection strategies for conventional steel and hybrid steel-timber floor systems.

CURIOUS ABOUT THE ACOUSTIC AND VIBRATION PERFORMANCE OF CONVENTIONAL STEEL AND HYBRID STEEL-TIMBER FLOOR SYSTEMS?

Pages 12 to 15 outline important factors to consider when evaluating the acoustic and vibration performance of conventional steel and hybrid steel-timber floor systems.

Methodology: North American Steel and Hybrid Steel Mass Timber Structural Systems Report utilizes detailed structural modeling and cradle-to-gate life cycle assessment (LCA) methodologies to evaluate global warming potential (GWP), system depth, and costs. Multiple floor and roof bay layouts are analyzed for both commercial and residential scenarios. The report also considers the potential for further carbon reduction through material selection, such as using industry-leading low-GWP steel and alternative concrete mixes.

Design and Construction Considerations Report expands North American Steel and Hybrid Steel Mass Timber Structural Systems Report considering fire, acoustic, and vibration performance of the different floor assemblies.

After reading the reports, you gain insights into:

- How conventional steel and hybrid steel-timber floor systems compare in terms of embodied carbon, system depth and cost
- Key factors to evaluate when considering fire safety, acoustic properties, and vibration performance of conventional steel and hybrid steel-timber floor systems

Embodied carbon and cost results may surprise you!