Welcome to our online tool designed for hygrothermal simulations! We've crafted a comprehensive guideline to assist you in effectively navigating the complexities of hygrothermal simulations to assess performance risks and degradation in building components. It features 12 steps essential for constructing a case file and conducting hygrothermal simulations. Here's a breakdown of our approach:

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| SAMiRA  A Seamless Journey  Project Design and End Goal:  Define your project's purpose and objective, setting the stage for performance assessment.  Selecting Performance Model:  Choose a suitable prediction or assessment model aligned with your study's goals.  Simulation Software Selection:  Assess the advantages and disadvantages of various software packages based on your project and research question.  Exposure to Moisture and Heat Sources:  Focus on exposing your building component to different environmental factors, including outdoor and indoor conditions, water infiltration, initial moisture content, condensation water, and heating elements.  Material Properties and Functions:  Determine material properties with a primary focus on hygrothermal aspects. Explore methods for imputing missing data.  Simulations and Post-Processing:  Run simulations on available infrastructure. Post-process results and calculate risk criteria using established prediction models (e.g., mold growth, wood rot). | Methodology Overview:  Our methodology provides a clear and adaptable approach to hygrothermal simulations. It's intentionally designed to be compatible with various software, offering flexibility in your simulation tools.  **Strategic Ranking System**:  Our tool employs a three-level ranking system - Superior, Advanced, and Minimum Requirements - to evaluate the depth of case-specific information:  Superior Level:  In-depth Understanding: Gather detailed information about local climate, specific material properties, and degradation characteristics.  Advanced Level:  Balanced Insight: Strike a balance between detailed information and practicality for meaningful simulations.  Minimum Requirements Level:  Solid Foundation: Establish a baseline, even with limited details, ensuring relevant and insightful simulations.  Interpreting Expenses   * **Computational**: Time spent on simulations and analysis. * **Time**: The duration of variable characterization and duration of the simulation process. * **Material**: Resources needed for simulations, i.e. hardware infrastructure. * **Financial:** The costs associated with conducting simulations or associated with variable characterization, such as material properties**.**   **A diagram of a different type of scenario  Description automatically generated with medium confidence** |

SAMiRA

A Seamless Journey

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