**Routing Pipes in 3D with Project-Specific Specs in AutoCAD Plant 3D**

Routing pipes using **project-specific specs** in **AutoCAD Plant 3D** ensures that the design follows predefined **material, size, pressure ratings, and connection types**. This helps maintain **consistency, compliance, and accuracy** throughout the project.

**🔹 Step 1: Assign a Project-Specific Pipe Spec**

1. **Open Project Manager** in AutoCAD Plant 3D.
2. **Right-click** on the project → Select **Project Setup**.
3. Navigate to **Piping Specs** → Click **Add New Spec**.
4. Browse and select the **custom spec (.pspx) file** created in Spec Editor.
5. Click **Set as Default** to ensure the spec is applied to all routed pipes.
6. Click **OK** to save the settings.

**🔹 Step 2: Start Routing Pipes in 3D**

1. **Open a 3D Model** in your Plant 3D project.
2. Click on the **Route Pipe** tool from the **Plant 3D Tool Palette**.
3. In the **Properties Palette**, select:
   * **Pipe Spec**: Ensure it matches the project-specific spec.
   * **Pipe Size**: Choose from the available nominal diameters (NPS or DN).
   * **End Type**: Select Butt Weld (BW), Threaded (THD), or Flanged (FLG).
4. Click on a **starting point** (e.g., an equipment nozzle or an existing pipe).
5. Move the cursor to define the pipe direction and length.
6. AutoCAD Plant 3D will **automatically insert elbows, tees, and reducers** based on the spec rules.
7. Press **Enter** to finish routing.

**🔹 Step 3: Adjust Routing Preferences**

1. Go to **Project Setup → Pipe Routing Preferences**.
2. Modify:
   * **Routing angles** (default 45° and 90°).
   * **Branch connection rules** (stub-in, tee, or weldolet).
   * **Default flange/gasket selections**.
3. Click **OK** to save and apply the changes.

**🔹 Step 4: Verify Pipe Routing and Connections**

1. **Use the Validation Tool**:
   * Open **Project Manager** → Click **Validate Project**.
   * Identify and fix any **incorrect fittings, sizes, or connection mismatches**.
2. **Check Isometric Preview**:
   * Generate **isometric drawings** to ensure correct routing and dimensions.
3. **Review the Piping BOM (Bill of Materials)**:
   * Open **Data Manager** → Check material and component assignments.

**🔹 Summary**

✅ **Project-Specific Pipe Spec Assigned and Used**.  
✅ **Correct Pipe Routing & Fitting Placement Ensured**.  
✅ **Validation Performed to Check Connection Rules**.  
✅ **BOM and Isometric Drawings Verified for Fabrication**.

This workflow **ensures accurate, consistent, and spec-compliant pipe routing** in **AutoCAD Plant 3D**.