

Pilot Plant Design Specification Sheet

How to Use

This planning sheet is useful in pre-planning a pilot or demonstration plant before approaching design fabrication firms for detailed engineering work or cost estimates. Fill in as many project details below as you can to help streamline the planning and quotation process. An experienced design and build engineer can help you build out and specify unknown project elements and is essential to commercial project success.

General Project Information

Timeline: _____
Budget: _____
Desired ROI over ___ years: _____
Electrical Area Classifications: _____
(ex. Class I, Class II, Div I, Div II, Zone 1, Zone 2)
Piping specifications: _____
Will any of the following be required (circle all that apply)
Fireproofing | Heat tracing | Lighting
Seismic zone: _____
Wind loads: _____
Materials of Construction (MOC): _____
Industry standards and codes: _____
(ex. GMP, Sanitary, 3A, Food grade, etc.)
Dimensions of available space: _____
Maximum height: _____
NDA required? Yes or No
Accessibility requirements: _____
(ex. None, ladders, platforms, manways, etc.)
Future expansion: _____
(ex. Additional process steps. Output increases, etc.)

Process Operating Parameters

Process objective: _____
Major unit operations: _____
Any specific equipment requirements: _____
(ex. Certain brands, special classifications or uncommon features)
Desired operating temperature ranges for:
Heating: _____
Separation: _____
Cooling: _____
Target operating pressure range: _____
Provide a description of operating temperatures and pressures through out the process: _____

Raw Material Composition: _____
Weight % of every component (mix/max): _____

Required production rate: _____
Ambient temperatures _____

Please attach any of the following if you have them: Process Flow Diagrams (PFD)'s, Piping and Instrumentation Diagrams (P&ID)'s, general arrangement drawings, Mass and Energy balances. At minimum, please ensure there is a drawing or written description of all raw materials with CAS numbers when possible, required equipment, residence times, or any other identified requirements.



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Instrumentation

Preferred control systems: _____
(ex. DCS, PLC, PAC, etc.)
Desired level of automation: _____
(ex. Fully, partially, mostly manual, etc)
Instrument communication type: _____
(ex. Analog, Fieldbus, Profibus, AS-I, DeviceNet,
Ethernet, etc.)

Manufacturer preferences or requirements?

Specific instruments to consider:

Control valves: _____
Transmitters: _____
Pressure gauges: _____
Relief valves: _____
Thermometers: _____
Flow meters: _____
Other: _____

Additional System Scope

Are any additional raw materials or final product storage tanks required? _____

Any additional system scope? Added processing steps? _____

Additional utilities? _____

Utilities

Which of the following utilities are available onsite? How much capacity is available and at what temperature and pressure?

High pressure steam: _____

Low pressure steam: _____

Hot oil: _____

Cooling water: _____

Chilled water: _____

Coolants/Chilled Glycol/brine refrigerants: _____

Air supply (for instrumentation): _____

Nitrogen pressure: _____

Electrical power (volts, phase, frequency, current): _____

How to turn this information into a cost estimate or basic design package

The easiest way to get a cost estimate is to contact a pilot plant design and build firm and discuss these project parameters with them. EPIC Systems, Inc. specializes in process system design, fabrication and automation. Visit www.epicmodularprocess.com or call 314-845-0077 to talk to an engineer.



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