SECOND DESK

INTERNATIONAL ADVISORY

UF, NF, RO & SWRO

Membrane separation across salinity and product duties

WATER & ENVIRONMENTAL TECHNOLOGIES



AI-generated illustration | not an actual project reference

Product scope and commercial role

TECHNICAL SCOPE

- UF pretreatment
- NF selective separation
- Brackish-water RO
- Seawater RO
- CIP and flushing

SECOND DESK ROLE

Technical-commercial qualification, market development and manufacturer or partner coordination.



Source: Second Desk website | sector image, not project evidence

Design basis and operating envelope

INPUTS REQUIRED BEFORE A COMPARABLE QUOTATION

- Feed chemistry
- Product flow and quality
- Temperature and fouling indicators
- Recovery and reject route

The owner and qualified manufacturer confirm operating conditions and applicable design basis before engineering release.

Engineering and component selection

DESIGN REVIEW POINTS

- Membrane flux
- Pressure and staging
- Feed spacers
- Pretreatment
- Materials and energy duty
- Cleaning philosophy

Selection trade-off

Compare UF, NF and RO based on target removal and salinity. Review normalized flux, pressure and recovery jointly rather than sizing from flow alone.

Project drawings, tolerances and design details remain subject to the responsible supplier or engineer.

Representative technical section



AI-generated technical concept | not to scale or for fabrication

DETAILS TO CONFIRM WITH QUALIFIED SUPPLIER

- Membrane flux
- Pressure and staging
- Feed spacers
- Pretreatment

Confirm the actual construction and dimensions from controlled supplier drawings or approved samples.

Representative functional arrangement

Representative NF/RO flow split; UF backwash and waste arrangements depend on module selection.



Input boundary

Feed chemistry / Temperature and fouling indicators

Operating and output boundary

Normalized permeate flow / Rejection/conductivity

Fabrication and assembly sequence



AI-generated manufacturing scene; illustrative only

TYPICAL CONTROLLED WORKFLOW

01 Frame fabrication

02 Membrane vessel mounting

03 Manifold fit-up

04 High-pressure piping

05 PLC and instrument integration

Inspection and quality control

TYPICAL QUALITY CONTROL POINTS

01 Pressure test per design

02 Membrane serial records

03 I/O check

04 Interlock simulation

05 Water-test protocol



AI-generated sector inspection scene; illustrative only

Inspection methods, sampling, hold points and sign-off depend on the order and approved quality plan.

Factory acceptance and site acceptance

FAT / manufacturing release

- Pressure test per design
- Membrane serial records
- I/O check
- Interlock simulation
- Water-test protocol

SAT / performance verification

- Normalized permeate flow
- Rejection/conductivity
- Recovery
- Pressure drop
- Alarms and baseline trends

Agree test conditions, tolerances, witness authority and punch-list closeout before testing. SAT is distinct from factory release.

Site integration and commissioning readiness



AI-generated application scene; illustrative only

SITE PREREQUISITES

01 Check pretreatment

02 Verify high-pressure lines and relief protection

03 Flush per supplier procedure

04 Align utilities

Packing, logistics and delivery

PRODUCT-SPECIFIC PACKING CHECKS

01 Preserve membranes per OEM

02 Secure vessels and high-pressure spools

03 Seal all process connections

Define the Incoterms® rule, named place, export documents, insurance responsibilities and site receipt process in the commercial agreement.



AI-generated logistics scene; illustrative only

Technical and commercial risk review

Check membrane chemical compatibility, differential pressure, fouling potential and concentrate disposal.

Design compliance

Compare the same data sheets, duty and explicitly agreed exclusions.

Technical evidence

Request relevant engineering documents, inspection plan and test records.

Execution risk

Check site access, spares, service scope and the manufacturer's support plan.

PUBLISHED ANONYMISED EXAMPLE

Published scope: containerised SWRO

200 m³/day

Pretreatment capacity

76 m³/day

SWRO product

40 ft

Container format



Source: Second Desk website | provenance not independently verified

Published scope covers pretreatment, factory integration, FAT, transport and site commissioning in North Africa.

Self-published, anonymised scope. Customer and project identity, role details and independent verification are not disclosed.

Responsibilities across the supply chain

OWNER / EPC	SECOND DESK	MANUFACTURER / CONTRACTOR
Defines duty, project constraints, site interfaces and acceptance authority.	Clarifies the opportunity, identifies suitable suppliers and coordinates technical-commercial communication.	Owns engineering, production, testing, guarantees, site execution and contractual obligations as agreed.

Supplier names, manufacturing capability, certificates, references and country-specific approvals are verified for each enquiry; no standing partner or factory is implied.

RFQ and evidence package

01	**Technical definition**	Duty and design basis, data sheets, scope boundaries and tie-in information.
02	**Supplier evidence**	Capability, drawings, applicable compliance, inspection plan and relevant references.
03	**Commercial offer**	Scope and exclusions, lead time, payment, Incoterms® rule, optional services.
04	**Handover plan**	FAT/SAT where applicable, documentation, spares, training and after-sales.

SECOND DESK

INTERNATIONAL ADVISORY

Discuss your next requirement

Share the application, target market or project, technical specification and expected delivery scope.

seconddeskinternational.com

Contact form: seconddeskinternational.com/#contact | Denizli, Türkiye | Meetings by appointment

SOURCE AND EVIDENCE NOTES

Second Desk sector page • US EPA: drinking-water treatment technologies • ICC Incoterms® guidance

Visuals: generated sector illustrations and Second Desk website imagery. Project provenance, supplier capabilities and certification remain unverified unless separately confirmed.