



DATA CENTER & CENTRAL PLANT

THERMAL ENERGY STORAGE SERIES

STRATIFIED. VERIFIED. STORED.

Stored capacity and usable capacity are not the same thing - how sharp and stable the thermocline stays decides the difference. The thinner the thermocline, the more of the stored volume you can draw within design temperature limits. The Novus TES Series is built to preserve it: purpose-designed stratification internals, vessel geometry matched to the thermal duty, and CFD-validated stratification performance confirmed before steel is cut.



5-300+
TON-HOURS PER VESSEL

ASME

U STAMP ALL SIZES



CFD

VERIFIED PRE-FABRICATION



THERMOCLINE PRESERVATION

Engineered to maintain a sharp thermal gradient between warm return and cold supply water, maximizing usable storage capacity. Custom internals are standard on every vessel, not an upgrade.



ENGINEERED STRATIFICATION INTERNALS

Coated carbon steel engineered diffusers, collectors, and stratification baffles, shop-welded, with 316/316L stainless steel as an optional upgrade. Minimum 90% stratification efficiency per AHRI Guideline T at design conditions.



CFD VERIFIED BEFORE FABRICATION

Transient CFD analysis performed on all vessels above 1,000 gallons, PE-reviewed prior to fabrication release. Performance gaps are caught on the screen, before steel is cut.



ASME U STAMP - ALL SIZES

Engineered to ASME Section VIII, Division 1 with the U Certification Mark and National Board registration as standard. Form U-1 provided with every vessel.



ENGINEERED FOR OUTDOOR SERVICE

Designed for outdoor exposed, above ground installation. Insulation, structural anchorage, seismic design, and freeze protection are engineered in from the start.



THREE-TIER PRODUCT LINE

Packaged emergency cooling for small data center nodes, modular systems for commercial plants, and large central plant systems for hyperscale campuses and district cooling.

GET MORE INFORMATION / QUOTE

✉ info@novusprocess.com

☎ (432) 333-4591



THERMAL ENERGY STORAGE TANKS



SPECIFICATION	TES-10K	TES-20K	TES-30K
NOMINAL STORAGE VOLUME	10,000 Gallons	20,000 Gallons	30,000 Gallons
THERMAL CAPACITY	111 ton-hr	222 ton-hr	333 ton-hr
SHELL DIAMETER (OD)	96 in. (8 ft 0 in.)	120 in. (10 ft 0 in.)	144 in. (12 ft 0 in.)
SHELL LENGTH (S-S)	24 ft 6 in.	31 ft 0 in.	32 ft 0 in.
OVERALL HEIGHT	28 ft 6 in.	36 ft 0 in.	38 ft 0 in.
DESIGN STANDARD	ASME Section VIII, Division 1 (2025) - U-Stamp on all sizes		
NATIONAL BOARD	Registered - Form U-1 provided with every vessel		
DESIGN PRESSURE	150 PSIG standard; 300 PSIG available and up to 1440 PSIG		
SHELL / HEAD MATERIAL	SA-516 Grade 70 Carbon Steel		
INTERNAL STRATIFICATION	Coated Carbon Steel Engineered Diffusers - Shop-Welded; 316/316L Stainless Steel Optional Upgrade		
STRATIFICATION EFFICIENCY	Minimum 90% per AHRI Guideline T at design conditions		
DESIGN DELTA-T	16 F design delta-T (ton-hour ratings basis)		
INSULATION SYSTEM	Closed-Cell Polyurethane / Polyisocyanurate, R-12 min., Aluminum Jacket		
Ton-hour ratings are nominal, calculated from stored water volume at a 16 F design delta-T (8.33BTU per gallon per F). Usable capacity depends on thermocline efficiency and sCFD-verified to each project duty. Contact Novus engineering for project-specific sizing.			

APPLICATIONS

✔ Hyperscale and colocation data center chilled water thermal storage

✔ N+1 chiller restart ride-through and backup cooling continuity

✔ Central plant load shifting and peak demand charge reduction

✔ District cooling thermal storage and load equalization

Industrial process cooling thermal management

✔ Mission-critical cooling where thermocline hold time is a defined requirement

ENGINEERING DELIVERABLES

✔ ASME Code calculations-full U-1 Data Report and Manufacturer's Data Report (MDR)

✔ Transient CFD thermocline analysis-PE-reviewed, pre-fabrication

✔ Stratification internals design-diffuser, collector, and baffle configuration

✔ Ton-hour capacity and hold-time verification at project design conditions

✔ Insulation R-value calculation and thermal performance documentation

✔ NDE documentation: radiography, UT, and hydrostatic test records

ASME SEC. VIII DIV. 1

ISO 9001 CERTIFIED

NATIONAL BOARD REGISTERED

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