

Butterfly Valves Corrosion Protected

EDF Energy requested the manufacture and corrosion protection, against pitting and cavitation, of 2 1600mm NB butterfly valves to extend their service life. In service, at Toreness Nuclear Power Station, the CW valves would be subject to constant exposure to sea water.

The body and blade of the butterfly valves were cast using BS3100: Grade A1 cast steel. The shafts were manufactured using BS970-431-S29 high strength stainless steel. Following suitable surface preparation the blades were coated with Corroglass 600 to a minimum DFT of 1500µm and when cured were thickness and spark tested.

The shafts were also protected against corrosion using Corrocoat Armagel to prevent any pitting corrosion in service. Armagel is suitable for immersed environments where good resistance to chemical attack combined with resistance to abrasion are required such as pipes, chutes, process tanks, valves, etc.

The bodies of the valves were also suitably prepared before being coated with multiple coats of Plasmatec HTE to a minimum DFT of 1500µm, HTE is used in areas requiring abrasion (and chemical) resistance. A topcoat of Corroglass EB was then applied to reach a total DFT of 2500µm.

Corrocoat EB is ideally suited for brush application to areas subjected to sea-water or other aqueous immersion. The coating also provides good cavitation resistance.

In order to provide all round protection the external surfaces of the valves were coated with Plasmatec ZF, a surface tolerant coating, before a final coat of Corrothane AP1 was applied.



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1: Newly cast butterfly valve body. 2: Newly cast blades. 3: Body & blades post abrasive blasting.

Pitting and Cavitation Protection

CORROCOAT

Full Corrosion Protection

After curing the valve body and blade were thickness and spark tested to identify any holidays and ensure the professional quality of the coating work.

Coating the valve with specialist protective coatings will significantly increase the expected service life and protect the valves exposure to seawater and from pitting and cavitation corrosion in particular.



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Industry	Nuclear power
Environment	Seawater service
Plant Coated	Butterfly valves
Preparation	Sa2½, profile 50µm
Coating	Armagel, Corroglass 600, HTE, Corroglass EB, ZF, AP1
Application	Hand and spray
DFT	1500µm and 2500µm
QA	Thickness & spark testing

4: Spray coating of blades. 5: Hand application of EB to valve body. 6: Completed valve blade. 7: Completed, corrosion protected, valve body.



LONG-TERM, COST-EFFECTIVE PROTECTION AGAINST CORROSION

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