

## Murray Irrigation PIIOP Round 3 Project

### ISSF Member

Australian Stainless Steel Development Association (ASSDA)

### Manufacturer

AWMA Water Control Solutions  
water equipment

### Field

Riverina, New South Wales, Australia

### Location

### Grade and surface

The fabrication of the water control gates for this project required over 250 tonnes of stainless steel including:

- Approx. 200 tonnes of grade 304 plate
- 1.43km of grade 304 wire rope
- Over 27,000 stainless steel bolts
- 260 stainless steel hinges
- 282m of 120mm diameter stainless steel shafts
- Stainless steel welding wire to complete over 7.5km of welding

Stainless steel grade/s and surface finish used:

- Grade 304 plate with a number 1 finish, also cable
- Grade 2205 round bar for LayFlat hinges and cable pins
- Grade 326 fasteners
- Grade 431 round bar for LayFlat shafts

Aluminium

### Competing materials

### Advantage points of using stainless steel

Stainless steel was specified for its longevity and durability, particularly with the water control gates being submerged in irrigation water. In addition, stainless steel was chosen over aluminium in the project's material specification to extend the nominated asset life from 25 years to 50 plus years. The gates have been integral to improving the efficiency and productivity of water delivery, and the



Picture courtesy of AWMA

use of stainless steel offers an economically maintainable and longer lasting infrastructure solution.



Picture courtesy of AWMA



Picture courtesy of ERTECH

### Product description

Murray Irrigation's Private Irrigation Infrastructure Operator Program (PIIOP) Round 3 is a modernisation project focused on upgrading larger infrastructure within the main canals of its irrigation assets, including Mulwala and Wakool Canals.

Mulwala Canal is Australia's largest irrigation canal, and together with Wakool Canal runs 157 km long. It has the capacity to deliver more than 1,500,000 ML of water per year to irrigators in the Southern Riverina, helping to generate more than \$500 million of gross agriculture revenue per year for the region.

ASSDA Member AWMA Water Control Solutions successfully delivered 91 stainless steel water control gates across the project's irrigation system assets. This modernisation program has substantially increased water efficiencies, improved water flow, enabled ordering flexibility and significantly reduced water leakage through infrastructure upgrades.

The works included 21 Mulwala Canal sites (65 LayFlat gates and 26 Undershot gates), Lawson Syphons (two Undershot gates), the Edward River Escape (two Bulkhead gates) and the Wakool Canal Offtake (three Undershot gates).



Picture courtesy of Murray Irrigation

Stainless steel is playing an important role in delivering effective infrastructure to achieve water savings, securing a sustainable environment and future for irrigation communities in Australia.

The life-cycle advantages stainless steel offers extends the service life of critical infrastructure for irrigation communities, and this project example can be promoted to influence the materials specification for similar projects globally, where aluminium is a competing material. This also extends to influencing similar infrastructure in applications such as flood barriers, dams, and other water infrastructure.