

ITALY: INSTALLATION OF THE FOURTH BRIDGE ON CANAL GRANDE , VENICE

PROJECT	EQUIPMENT	WEIGHT
CIVIL	SPMTs – BARGE – GANTRY LIFTING SYSTEM – MOBILE CRANE	UP TO 270 TON



“An Incredible Journey along the Canal Grande” were the headlines in the Italian newspapers, when Fagioli transported by barge, a 400 tonne ‘beast’ of a bridge from a shipyard in Marghera to the Venice Canal Grande between Piazzale Roma and the railway station. The new bridge which is a long time coming is the fourth bridge across the Canal Grande, it’s a wide curve of glass and steel. Fagioli were awarded the door-to-door transport and installation of the bridge and were responsible for the management and engineering of the project, which included supplying all the materials and personnel required and liaising with the various authorities to obtain the relevant permits. Because of the narrow channels and sea tides, the ends of the sections were protected with big rubber covers filled with polyurethane foam. The two side sections (weighing 85 tonnes each, 7m wide and 15m long) of the bridge were loaded on two self-propelled modular

transporters at the Fagioli storage area in Porto Marghera and rolled on to the group-owned barge Susanna. For each section, Fagioli used 2 x 4 axle trailers. The channel was closed during this spectacular transport, which was performed during the night. One of the most challenging moments was the passage under the Rialto Bridge. Fagioli studied the lowest tide possible and the necessary lowering operation of the barge (about two metres and 60cm under sea level). As a result it was decided to ballast the barge to take extra water in order to pass underneath (with only one metre between the section positioned on the barge and the historic vault). Fagioli rolled and mounted onto the barge, a telescopic boom crane used to position and move the sections. The added difficulty was the limited space and manoeuvring possibilities of the crane while hoisting heavy items, but after four hours the two side sections were positioned and installed.



The second stage of the bridge assembly was the transport, lifting and installation of the central section, 55.2m long, 9.5m wide and weighing 270 tonne. Before this could be carried out, two 600 tonne capacity gantry cranes were positioned under the section on the barge. When the barge arrived, ropes were connected from the barge winches to the bollards on the bank. One of the most thrilling moments was the rotation of the central and heavier section. This was raised a few centimetres at a time with gantry cranes and rotated 90 degrees to its final position, using SPMTs parallel to the channel. It was then lowered and fixed to the other two sections previously positioned. The use of gantry cranes and SPMTs (with its incredible manoeuvrability) was the perfect solution for a cost and time saving installation in the most romantic and famous city in the world.

