

GATE VALVE HAVING LOW-FRICTION COATING OVER SUBSTRATE AND METHOD FOR MAKING SAME

ABSTRACT

A gate valve (10) has a body (11), the body (11) having a cavity (18) and a flow passage (12) intersecting the cavity (18). A seat (20) fabricated from a ceramic and/or hardfacing alloy matrix composite substrate is mounted to the body (11) at the intersection of the flow passage (12) and the cavity (18). A gate (14) fabricated from a ceramic and/or hardfacing alloy matrix composite substrate is installed at the cavity and has an engaging face (26) that slidingly engages the seat (20) while the gate (14) is being moved between open and closed positions. The engaging faces (26,28) of the gate (14) and seats (20) are coated with a low-friction material (30,32) to facilitate sliding. The ceramic and/or hardfacing alloy matrix composite (44,48) substrate construction of the gate (14) and seats (20) with low friction engaging surfaces (26, 28) enhances the gate valve's bearing stress capacity.

Figure 2