

SPECIFICATION FOR FABRICATED **CHANNEL MOUNTED TYPE PENSTOCKS**

SPECIFICATION No **0003-SGC**

Frame shall be half or full frame manufactured from welded rigid mild steel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable gusseted yoke piece to allow removal/fitting of door as required.

Frames shall be suitable for grouting into prepared rebates in channel - walls and floors. If no prepared civil rebates are available side fixing angles shall be included to allow wall fixing in channels. Maximum water depth to top of door.

The seating side of the frame shall have resilient EPDM seals to the vertical sides, seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners, and poly ethylene retaining strips BS ISO 15527:2010, so the seal can be removed with the Penstock in situ.

Seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners and low-friction retaining strips.

The off-seating side of the frame shall have low-friction guide strips to ensure door maintains contact with the side seals. Fasteners shall be stainless steel grade 316 BS EN ISO 3506 pt1-2.

Doors shall be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall comprise a main sealing plate with a hollow section reinforcing matrix welded to the off-seating side of the plate.

The base of the door shall have a formed EPDM seal to create a flush invert, the EPDM seal will be to BS681.1, the seal will be mechanically fixed with stainless steel grade 316 fasteners BS EN ISO 3506 pt 1-2 and retaining strips 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404), so it can be removed with the Penstock in situ .

A door lifting bracket shall be welded to the top of the door to enable connection of the operating stem door nut. The design shall enable removal of the nut without disturbing the door.

The Penstock operating stem will be of the rising or non-rising type and be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404). The stem will work through a machine cut operating nut either housed in a thrust taking arrangement mounted direct to the top of the frame, remote on a pillar or housed in a nut located in a pocket at the top of the Penstock door. If actuated the stem will work through the drive sleeve of the actuator unit. (Actuator or gearbox operated Penstocks will utilise the drive sleeve supplied by the vendor)

Headstocks shall be manufactured from heavy gauge mild steel and shall be heavy duty galvanised to BS729.

For rising stems a cover tube shall be provided (indicating or non-indicating). Actuator cover tubes to be Manufacturer's standard.

The Penstock will be clockwise closing at the hand wheel. This will be clearly marked on the hand wheel (integrally or mechanically fixed. the hand wheel will be no smaller than 300mm and geared that one operator can operate the Penstock using an effort of approximately 180N. This excluded electrically actuated Penstocks.

Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head.

The maximum allowed leakage will be as BS7775:2005.

BS Specification BS7775:2005, including normative specifications references therein.

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods.