

	8	7	6	5	4	3	2	1
MATERIAL AND GRADE SCHEDULE — ALL FASTENERS AND CONCEALED HARDWARE ARE STAINLESS OR DUPLEX								
COMPONENT	GRADE	STANDARD	NOTES					
Sphere shell — 12 pressed gores	SS316L / 1.4404	ASTM A240 / EN 10088-2	t 5.0, #8 mirror; EN 10029 Class A; EN 10204 3.1					
Polar caps x2 (spun)	SS316L / 1.4404	ASTM A240	t 5.0, rim Ø684, blank Ø698.1					
Doubler collar — INTERNAL	SS316L / 1.4404	ASTM A240	t 8, rolled to R_MID 997.5, r 242→358					
Support skirt	SS316L / 1.4404	ASTM A240	t 10, Ø600 mean x 446 tall					
Pebble trays + inner support ring	SS316L / 1.4404	ASTM A240	12 perforated deck, 24 segments ≈23 kg filled					
Reveal collar	SS316L / 1.4404	ASTM A240	Two-part, SITE-SCRIBED 4 ±2					
Riser, stays, conditioner	SS316L / 1.4404	ASTM A312 / A240	DN80 sch10S; bellows 316L single-ply					
BASE FLANGE	CRC-V 1.4529 (6-Mo)	EN 10088-2 / UNS N08926	25 plate, PREN ≥43 — permanently wet crevice					
Anchor studs 6 x M16 x 400	CRC-V 1.4529 / 1.4565	EN 10088-3	Headed Ø40 x 12, h_ef 250					
Anchor nuts	duplex 1.4462	EN 10088-3	HALOGEN-FREE, METAL-FREE ANTI-SEIZE ONLY					
Plate washers Ø45 x 6	CRC-V 1.4529	EN 10088-2	One per anchor slot					
Levelling shims 0.5/1.0/2.0/3.0	316L or CRC-V ONLY	—	CARBON STEEL, PTFE AND FILLED NYLON PROHIBITED					
Jacking pads 25 x 25 x 6	hardened CRC-V	—	Welded to the embed ring, Ø700 PCD					
CAST-IN EMBED RING	duplex 1.4462	EN 10088-2	20 thick, OD 940 / ID 560, top →450					
Guide dowels 2 x Ø16 h9	duplex 1.4462	EN 10088-3	200 long, 30° lead over 12					
Jacking screws 3 x M20 x 60	duplex 1.4462	EN 10088-3	17 mm hex socket drive, range ±15					
Bonding bosses M8	CRC-V 1.4529	—	Stud-welded above the grout line					
Weld consumable	ER316L	AWS A5.9 / EN ISO 14343	GTAW, argon back-purge, WPS-01					
Epoxy grout	chloride-free, ≥80 MPa	ASTM C881	Bond-breaker film under the flange					
Pad, chamber, reservoir concrete	C35/45 XS3, CEM III/A	EN 206 / BS 8500	w/c ≤0.40, binder ≥340 kg/m³, cover 55					
Pad reinforcement	H16 + local 1.4362 top mat	BS 4449 / EN 10088	NOT tied to the studs — NYLON TIES ONLY					
Reservoir internal lining	WRAS / NSF-61 epoxy	solvent-free	All internal faces — mandatory					

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NO HYDROCHLORIC ACID ANYWHERE
ON OR NEAR THE SPHERE.

Masons routinely acid-wash cement haze off new paving. HCl permanently stains and pits 316L and starts corrosion far worse than tea staining. THIS IS THE SINGLE MOST LIKELY SITE-CAUSED FAILURE ON THE WHOLE PROJECT.

• NO chlorides, bleach or abrasive cleaners.

• NO carbon steel, galvanised steel, aluminium, brass or zinc in or in contact with the assembly.

• NO carbon-steel shims, brushes or grinding debris anywhere near the sphere.

• HIGH-PRESSURE WASH MEANS ≤40 BAR AT ≥400 mm STANDOFF WITH A 40° FAN NOZZLE, RO PERMEATE, NEVER A TURBO NOZZLE.
An unbounded instruction invites a 120 bar machine against a stated 584 kPa local buckling limit.

• The sphere is installed AFTER all adjacent wet trades, cementitious work and any acid cleaning are complete and signed off — or it stays fully encapsulated in a vented cage.

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FINISH SCHEDULE

SURFACE	FINISH
Sphere exterior (visible)	Mechanical #8 mirror, Ra ≤0.1 μm — SEE THE DECISION GATE
Shell welds	Blend flush to the parent mirror, ≤0.2 proud, re-polished
Riser, stays, internals	Pickle and passivate — citric ASTM A967, clean per A380
Skirt, flange, slots	Pickle and passivate; ferroxyl in the SHOP under a witnessed ITP
All hole edges	Deburr and polish — the water film flows over them
Trays, reveal collar	Slip-classified per SH10 T38; radiused and deburred edges

ELECTROPOLISH DECISION GATE – SH14

"MIRROR #8 + ELECTROPOLISHED" IS SELF-CONTRADICTIONARY AS WRITTEN — ASSDA states a mechanically mirror-polished surface will normally LOSE its reflectance if electropolished.

IF 60° GLOSS HOLDS ≥ 620 GU AFTER ELECTROPOLISH → RETAIN
electropolish 20–40 μm + citric passivation.

IF GLOSS DROPS → DELETE ELECTROPOLISH; specify mechanical
#8 (Ra ≤0.1) + citric passivation to ASTM A967.

Heavy orange peel is NOT removable by electropolishing and must be rejected at the pressing stage.

HANDOVER QA – FINISH AND CLEANLINESS

REC	REQUIREMENT	ACCEPTANCE
Q1	FERROXYL (ASTM A380) ON CONCEALED STAINLESS ONLY — skirt, flange, slots and weld	No free iron. NOT on the mirror crown, NOT
	repairs below the paving line — IN THE FABRICATION SHOP, UNDER A WITNESSED ITP	annually; the blue stain is by design
Q2	60° specular gloss, 8 points per witness circle at $\theta = 45^\circ / 90^\circ / 135^\circ$	≥ 620 GU, or the value agreed from SH14
Q3	Misting / drying cycles plus documented visual inspection	At 30 days AND 90 days
Q4	Humidity / immersion test on the retained witness coupon	No rust bleed
Q5	Ra log at the witness circles	Ra $\leq 0.1 \mu\text{m}$
Q6	Passivation record — citric to ASTM A967, cleaning per ASTM A380	Certificate
Q7	EN 10204 3.1 certificates — plate, pipe, fittings, fasteners, consumables	Complete dossier
Q8	Bolt torque record, 3 cross-tightened passes at 90 N·m $\pm 10\%$	Every bolt recorded

GALVANIC AND CONTACT CONTROL

1. The 316L → Cu bonding transition is made IN THE PLANTROOM, dry and outside the wet zone, so no new galvanic couple is created.
2. Anti-seize is HALOGEN-FREE AND METAL-FREE (PTFE / ceramic marine grade). Copper- and nickel-loaded pastes are prohibited on 6-Mo and duplex threads.
3. No coconut palm within a fall radius of the sphere, or a documented de-nutting regime in the resort's guest-safety register → a 118 j impact on the mirror. **CONDITION OF WARRANTY.**

REV	DATE	DESCRIPTION	BY
D	2026-08-05	CONCEALED SKIRT ANCHORAGE, RESERVOIR + PLANT, PEBBLE COLLECTOR	NX
E	2026-08-20	REV D.2 ALIGNMENT + VISUAL QA CORRECTIONS	NX
F	2026-09-03	LOGO ENGRAVING ADDED (SH15); SHEET COUNT 14 -> 15	NX
G	2026-09-05	AUDIT CLOSE-OUT: CART 082 FB, SLOT 24, 24 TRAYS, DN80	NX
G.2	2026-09-06	PART DRAWINGS SH30-38; SLOTS AZ22.5; DOUBLER R995	NX
G.3	2026-09-06	SH37 BRACKET, SH42 WELD MAP, P-16 BELLOW; IFF	NX

SPA FOUNTAIN – B7 SPA, MALDIVES

SPA-F-SH13 — MATERIAL, FINISH AND PROHIBITIONS

DRAWN: NaXief Eng.		CHECKED: NX 2026-09-06		APPROVED: I. NAZEEF 2026-09-06		STATUS: IFF REV G.3	
DATE: 2026-09-06		REV: G.3		UNITS: mm		SCALE: AS NOTED	
						A3 · SHEET 13/25	
ISSUED FOR FABRICATION — REV G.3 · HOLD POINTS PER SH42 WORK TO FIGURED DIMENSIONS - ISO 2768-mK U.O.S.							