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| DOC NUMBER: 569-DB7B-MEC-731-001 | | CLIENT NUMBER: PRD-MEC-DSH-021 | |
| CLIENT: TAKEDA | | | |
| PROJECT: BURITI EPCVM PROJECT | | | |

DATA SHEET
BUFFER TANK
BT-7B-1

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| 0 | 30/JUL/2021 | ISSUED FOR CONSTRUCTION | ASO | LFF | RSP |
| B | 28/JUN/2021 | 90% DD ISSUE | ASO | LFF | RSP |
| A | 12/FEB/2021 | 30% DD ISSUE | ASO | LFF | MAJ |
| REV | DATE | DESCRIPTION | EXEC | CHECK | APPROV |

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|     | |
| NUMBER: 569-DB7B-MEC-731-001 | CLIENT NR PRD-MEC-DSH-021 |
| TITLE BUFFER TANK - BT-7B-1 | SHEET: 2/5 REV.: 0 |

1. REVISION HISTORY

| Rev | Reason For Change |
|-----|---|
| A | ORIGINAL ISSUE |
| B | PAGE 03, item 2.1 : changed capacity from 14.0 m³ to 30.0 m³ |
| | PAGE 03, item 2.2 : changed internal diameter from 2,500 mm to 3,000 mm |
| | PAGE 03, item 2.3 : changed height from 3,000 mm to 4,800 mm |
| | PAGE 03, item 2.3 : changed temperature from 15.0/5.0 °C to 7.2/5.0 °C |
| | PAGE 03, item 2.3 : informed design temperature |
| | PAGE 03, Note 6 : added |
| | PAGE 04: Adjusted nozzles, diameter and height in the sketch |
| | PAGE 05: included nozzles orientation |
| 0 | ISSUED FOR CONSTRUCTION |

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CLIENT NR PRD-MEC-DSH-021

TITLE

SHEET:
3/5

BUFFER TANK - BT-7B-1

REV.:
0

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|-----|---|-------------------------|--------------------------|------------------------|
| 1 | GENERAL | | | |
| 1.1 | SERVICE: | CHILLED WATER | ITEM Nº: | BT-7B-1 |
| 1.2 | LOCAL: | DRUG SUBSTANCE BUILDING | QUANTITY: | 1 |
| 1.3 | MANUFACTURER: | (Note 1) | MANUFACTURING STANDARD: | - |
| 1.4 | APPLICABLE: | PROPOSAL | | |
| 2 | OPERATION CONDITIONS (Note 2) | | | |
| 2.1 | CAPACITY (m ³): | 30.0 | STORED PRODUCT: | WATER |
| 2.2 | INTERNAL DIAM. (mm): | 3,000 | CYLINDRICAL HEIGHT (mm): | 4,800 |
| 2.3 | OPERAT. TEMPER. - HOT /COLD SIDE (° C): | 7.2/4.0 | DESIGN TEMPER. (° C): | -10 @ 40° |
| 2.4 | DESIGN PRESS (barg): | ATM | HIDROSTATIC TEST: | FULL OF WATER |
| 3 | CONSTRUCTION (Note 2) | | | |
| 3.1 | TYPE OF TANK: | VERTICAL | SUPPORT: | NO (ON CONCRETE BASE) |
| 3.2 | HEAD: | PLAN | BOTTOM: | PLAN |
| 4 | MATERIAL | | | |
| 4.1 | SHELL: | ASME/ASTM A-36 | HEAD: | ASME/ASTM A-36 |
| 4.2 | NOZZLE FLANGES: | ASME/ASTM A-105 | NOZZLE NECK: | ASME/ASTM A-106 GR. B |
| 4.3 | DIVISORY PLATE: | ASME/ASTM A-36 | | |
| 4.3 | BOLTS: | ASME/ASTM A-193 GR. B7 | NUTS: | ASME/ASTM A-194 GR. 2H |
| 5 | MATERIALS INSPECTION | | | |
| 5.1 | IN THE PLATE SUPPLIER: | YES | | |
| 5.2 | IN THE EQUIPMENT MANUFACTURER: | YES | | |
| 5.3 | IN THE CLIENT'S SITE: | YES | | |
| 6 | TANK WEIGHT | | | |
| 6.1 | EMPTY (kg): | Note 1 | FULL OF WATER (kg): | Note 1 |
| 7 | MINIMUM THICKNESS OF PLATES | | | |
| 7.1 | MINIMUM THCKNESS (mm): | 5 | | |
| 7.2 | CORROSION OVERTHICKNESS (mm): | 1 | | |

Notes:

1) To be confirmed by supplier.

2) The supplier shall be responsible for all equipment dimensioning according to the operational conditions, as well as for the equipment support design.

3) Dimensional drawing of the equipment shall be part of the proposal.

4) A 150 mm projection should be expected until the face of the flanged nozzles.

5) Lifting lugs and grounding clips shall be included in the supply.

6) The tank shall have an internal and external painting (only primer coat in epoxy, minimum thk of 100 µm) . Clips should be provided in the equipment for fixing the thermal insulation.

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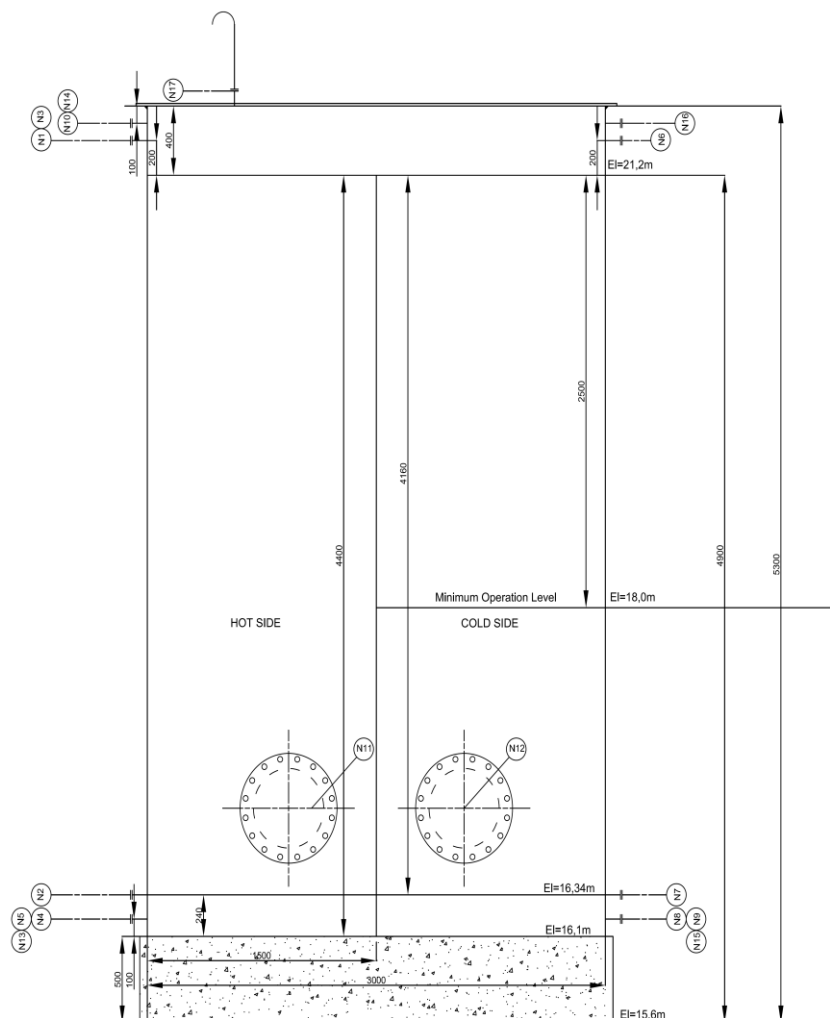
SHEET:
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BUFFER TANK - BT-7B-1

REV.:
0

NOZZLES

| POS | DIAM | QTY | CLAS | TYPE | FACE | THICKNESS | SERVICE | OBSERVATION |
|-----|--------|-----|------|------|------|-----------|---------------------------------|-----------------|
| N1 | 10" | 1 | 150# | WN | RF | SCH40 | HOT WATER INLET | ASME/ANSI B16.5 |
| N2 | 10" | 1 | 150# | WN | RF | SCH40 | HOT WATER OUTLET | ASME/ANSI B16.5 |
| N3 | 1 1/2" | 1 | 150# | WN | RF | SCH40 | MAKE-UP WATER INLET | ASME/ANSI B16.5 |
| N4 | 2" | 1 | 150# | WN | RF | SCH40 | HOT WATER SIDE - DRAIN | ASME/ANSI B16.5 |
| N5 | 1 1/2" | 1 | 150# | WN | RF | SCH40 | LIT-980005B | ASME/ANSI B16.5 |
| N6 | 10" | 1 | 150# | WN | RF | SCH40 | COLD WATER INLET | ASME/ANSI B16.5 |
| N7 | 10" | 1 | 150# | WN | RF | SCH40 | COLD WATER OUTLET | ASME/ANSI B16.5 |
| N8 | 2" | 1 | 150# | WN | RF | SCH40 | COLD WATER SIDE - DRAIN | ASME/ANSI B16.5 |
| N9 | 1 1/2" | 1 | 150# | WN | RF | SCH40 | LIT-980005A | ASME/ANSI B16.5 |
| N10 | 2" | 1 | 150# | WN | RF | SCH40 | OVERFLOW | ASME/ANSI B16.5 |
| N11 | 18" | 1 | 150# | SO | RF | SCH40 | MANHOLE (HOT SIDE) | ASME/ANSI B16.5 |
| N12 | 18" | 1 | 150# | SO | RF | SCH40 | MANHOLE (COLD SIDE) | ASME/ANSI B16.5 |
| N13 | 1 1/2" | 2 | 150# | SO | RF | SCH40 | LEVEL GAUGE 9800251 (HOT SIDE) | ASME/ANSI B16.5 |
| N14 | 1 1/2" | 2 | 150# | SO | RF | SCH40 | LEVEL GAUGE 9800251 (HOT SIDE) | ASME/ANSI B16.5 |
| N15 | 1 1/2" | 2 | 150# | SO | RF | SCH40 | LEVEL GAUGE 9800250 (COLD SIDE) | ASME/ANSI B16.5 |
| N16 | 1 1/2" | 2 | 150# | SO | RF | SCH40 | LEVEL GAUGE 9800250 (COLD SIDE) | ASME/ANSI B16.5 |
| N17 | 3" | 1 | - | - | - | SCH40 | VENT | ASME/ANSI B16.5 |



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SKETCH - NOZZLES ORIENTATION

