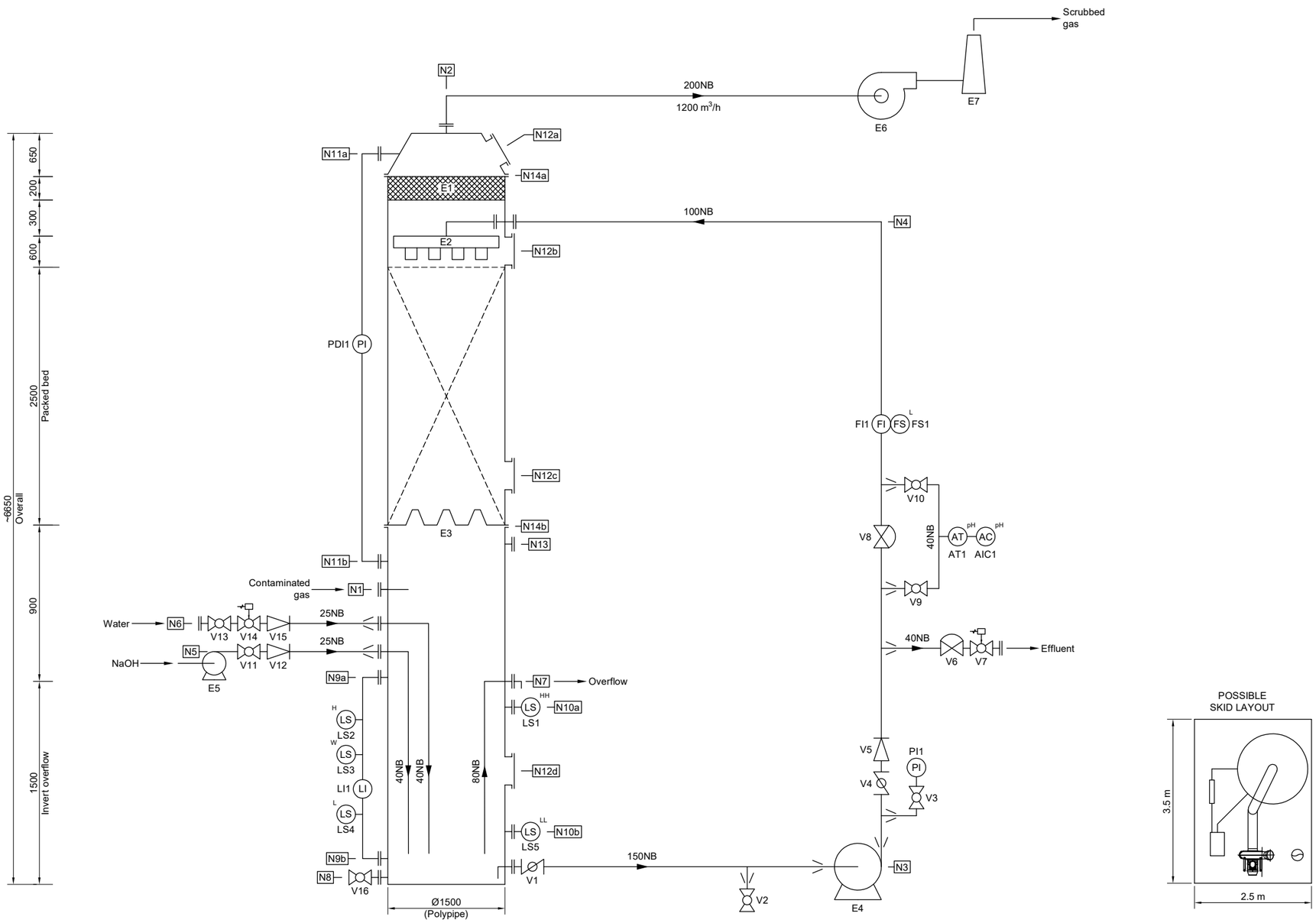


| DESIGN DATA - SCRUBBER | |
|---|---|
| Operating pressure | -750 Pa* |
| Design pressure | -2500 Pa |
| Operating temperature | Up to 40 °C |
| Design temperature | 45 °C |
| Gas flowrate | 1200 $m^3$/h |
| Liquid flowrate | 50 $m^3$/h |
| Scrubbing liquor | NaOH |
| Inlet concentration (N1) | TBC |
| Efficiency / outlet conc. (N2) | TBC |
| Materials of construction | Sump/tower: HDPE |
| | Internals: HDPE |
| | Pipework/valves: PP |
| | Ducting: PP |
| | Gaskets: EPDM |
| Packing media | 38 mm Pall Rings (PP) |
| Pressure drop over packing | 50 Pa |
| Total tower pressure drop | 250 Pa |
| Sump nominal capacity | 2.30 $m^3$ |
| Sump max. capacity | 2.65 $m^3$ |

CONNECTION SCHEDULE

| NOZZLE | DESCRIPTION | SIZE (mm) |
|---|---|---|
| N1 | Gas inlet c/w int'l deflector | 200 |
| N2 | Gas outlet | 200 |
| N3 | Recirc. outlet c/w internal elbow | 150 |
| N4 | Recirc. inlet | 100 |
| N5 | Chemical inlet c/w int'l dip-pipe | 40 |
| N6 | Water inlet c/w int'l dip-pipe | 40 |
| N7 | Overflow c/w int'l dip-pipe & ext'l elbow | 80 |
| N8 | Drain | 50 |
| N9 | Level indicator fittings (2 off) | 40 |
| N10 | Level switch fittings (2 off) | 50(1.5") |
| N11 | Pressure indicator fittings (2 off) | 25(1/8") |
| N12 | Access ports (4 off) | 500 |
| N13 | Spare nozzle | 50 |
| N14 | Tower break flanges (2 off) | 1500 |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

VALVE SCHEDULE

| VALVE | DESCRIPTION | SIZE (mm) |
|---|---|---|
| V1 | Butterfly valve, recirc. outlet | 150 |
| V2 | Ball valve, pump drain | 25 |
| V3 | Ball valve, pressure gauge isolation | 25 |
| V4 | Butterfly valve, pump discharge | 100 |
| V5 | Wafer check valve, pump discharge | 100 |
| V6 | Diaphragm valve, bleed | 40 |
| V7 | Electric-actuated ball valve, bleed | 40 |
| V8 | Diaphragm valve, recirc. | 100 |
| V9 | Ball valve, loop | 40 |
| V10 | Ball valve, loop | 40 |
| V11 | Ball valve, chemical inlet | 25 |
| V12 | Non-return valve, chemical inlet | 25 |
| V13 | Ball valve, water inlet | 25 |
| V14 | Electric-actuated ball valve, water inlet | 25 |
| V15 | Non-return valve, water inlet | 25 |
| V16 | Ball valve, drain | 50 |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

EQUIPMENT AND INSTRUMENTATION

| TAG | DESCRIPTION |
|---|---|
| E1 | Demister - 150 mm thick mesh (PP) |
| E2 | Distributor - Tray (HDPE) |
| E3 | Packing support (HDPE) |
| E4 | Pump |
| E5 | Dosing pump |
| E6 | *Fan |
| E7 | **Stack - Ø250 x 10 m tall. Ø150 outlet (uPVC-GRP) |
| - | - |
| - | - |
| - | - |
| - | - |
| LI1 | Level gauge c/w 2 no. valves & mag float - Forbes |
| LS1 | Level switch (HiHi) - E+H Liquipoint FTL31 |
| LS2 | Level switch (Hi) - BAMO BSM501 |
| LS3 | Level switch (Working) - BAMO BSM501 |
| LS4 | Level switch (Lo) - BAMO BSM501 |
| LS5 | Level switch (LoLo) - E+H Liquipoint FTL31 |
| - | - |
| PI1 | Pressure gauge - Stewart Buchanan 2032 |
| PDI1 | D. Pressure indicator - WIKA A2G-10 |
| - | - |
| FI1 | Flow indicator - ASV Stübbe DFM350 |
| FS1 | Flow switch - ASV Stübbe ZE951 |
| - | - |
| AT1 | pH transmitter - LTH P14 c/w tee |
| AIC1 | pH controller - LTH BXD17 |
| - | - |
| - | - |

NOTES:

**To process 1200 $m^3$/h air at up to 40 °C, containing odourous gas from waste food oils processing. To be scrubbed using NaOH.**

- Skid mount option - Approx dims 2.5 x 3.5 m
- *Fan duty to allow 500 Pa duct losses
- **Stack to be bracketed to adjacent building by Forbes for lateral support


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| | | |
|---|---|---|
| Drawn by - B. Whicker | Date - 23/10/20 | D/O check by - BH 26/10/20 |
| Customer - Brocklesby | | Factory approval by - N/A |
| Order No. - TBC | | Site ref. - Hull (UK) |

Title: Odour scrubber enquiry P&ID

Scale: N/A

Drawing No. -

A3

Revision: 0