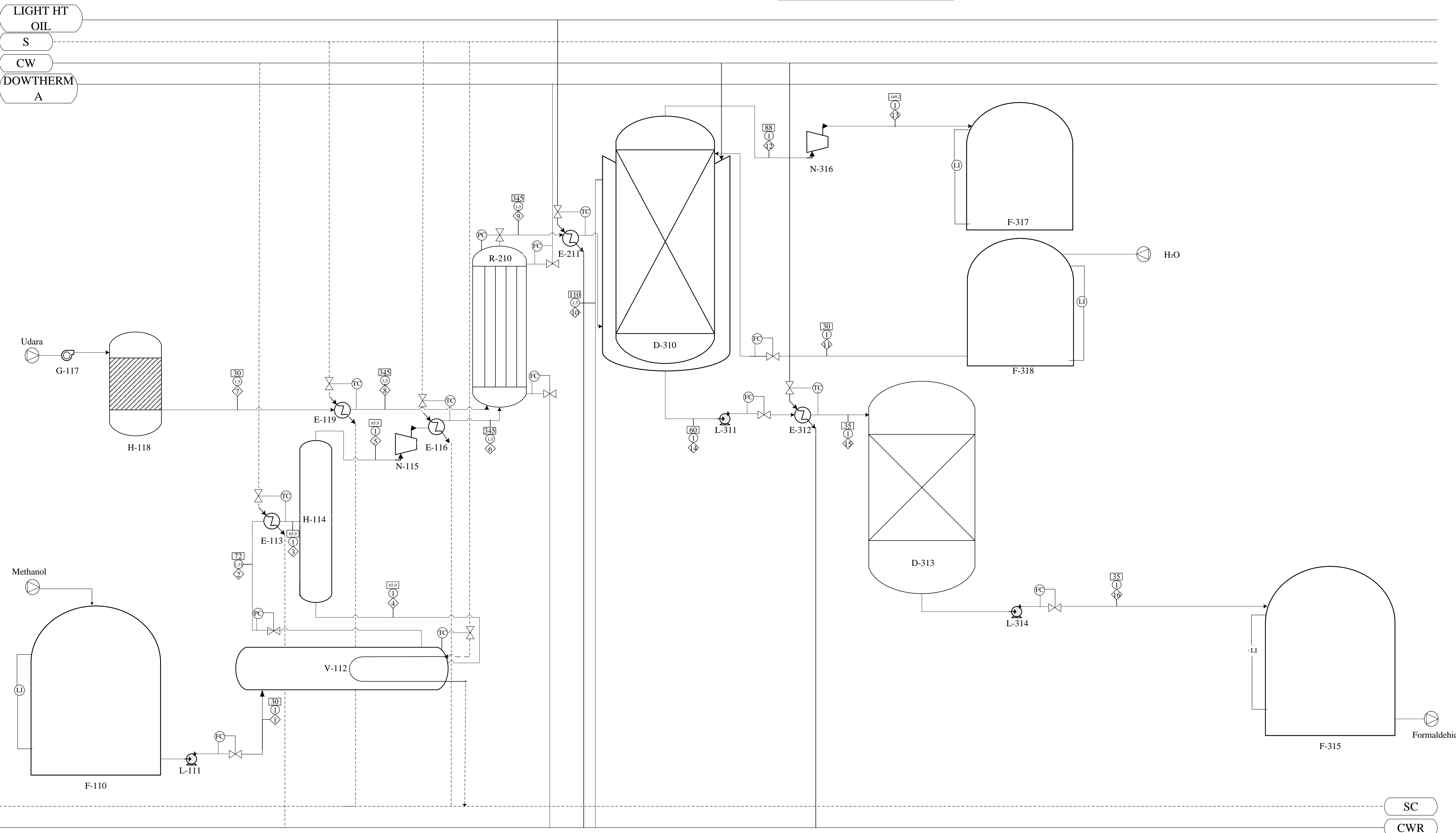


# PABRIK FORMALDEHIDA DARI METHANOL DENGAN PROSES FORMOX

## SKALA 1 : 100



| KETERANGAN |                         |
|------------|-------------------------|
| ◇          | Aliran Massa; (kg/jam)  |
| □          | Temperatur ;(°C)        |
| ○          | Tekanan; (atm)          |
| S          | Steam                   |
| PW         | Proses Water            |
| Dowterm A  | Larutan Dowterm         |
| SC         | Steam Condensat         |
| CWD        | Cooling Water Discharge |

| No | Kode Alat | Nama Alat                           |
|----|-----------|-------------------------------------|
| 1  | F-110     | Tangki Penyimpanan Methanol         |
| 2  | L-111     | Pompa 1                             |
| 3  | V-112     | Vaporizer                           |
| 4  | E-113     | Cooler 1                            |
| 5  | H-114     | Separator                           |
| 6  | N-115     | Kompresor 1                         |
| 7  | E-116     | Pre-Heater Reaktor 1                |
| 8  | G-117     | Blower                              |
| 9  | H-118     | Filter Udara                        |
| 10 | E-119     | Pre-Heater Reaktor 2                |
| 11 | R-210     | Reaktor                             |
| 12 | E-211     | Cooler 2                            |
| 13 | D-310     | Absorber                            |
| 14 | L-311     | Pompa 2                             |
| 15 | E-312     | Cooler 3                            |
| 16 | D-313     | Ion Exchange                        |
| 17 | L-314     | Pompa 3                             |
| 18 | F-315     | Tangki Penyimpanan Formaldehida     |
| 19 | N-316     | Kompresor 2                         |
| 20 | F-317     | Tangki Penyimpanan Produk Samping   |
| 21 | F-318     | Tangki Penyimpanan H <sub>2</sub> O |

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FLOWSHEET PERANCANGAN PABRIK  
FORMALDEHIDA DARI METHANOL  
DENGAN PROSES FORMOX

PROGRAM STUDI TEKNIK KIMIA  
FAKULTAS TEKNIK  
UNIVERSITAS PEMBANGUNAN NASIONAL "VETERAN"  
JAWA TIMUR  
2023

| Komponen  | Aliran Massa (Kg/Jam) |                  |                  |                 |                  |                  |                   |                   |                   |                   |                  |                   |                   |                   |                   |                   |
|---|-----------------------|------------------|------------------|-----------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|   | 1                     | 2                | 3                | 4               | 5                | 6                | 7                 | 8                 | 9                 | 10                | 11               | 12                | 13                | 14                | 15                | 16                |
| Metanol (CH <sub>3</sub> OH)                                  | 9303.7724             | 9303.7724        | 9303.7724        | 93.6956         | 9275.8611        | 9275.8611        | -                 | -                 | 148.4138          | 148.4138          | -                | -                 | -                 | 1503.8397         | 1503.8397         | 1503.8397         |
| Oksigen (O <sub>2</sub> )                                     | -                     | -                | -                | -               | -                | -                | 4557.5906         | 4557.5906         | -                 | -                 | -                | -                 | -                 | -                 | -                 | -                 |
| Nitrogen (N <sub>2</sub> )                                    | -                     | -                | -                | -               | -                | -                | 17145.2219        | 17145.2219        | 17145.2219        | 17145.2219        | -                | 17145.2219        | 17145.2219        | -                 | -                 | -                 |
| Formaldehida (CH <sub>2</sub> O)                              | -                     | -                | -                | -               | -                | -                | -                 | -                 | 8553.2035         | 8553.2035         | -                | 25.6596           | 25.6596           | -                 | -                 | -                 |
| Formaldehida Monohydrate (CH <sub>2</sub> O.H <sub>2</sub> O) | -                     | -                | -                | -               | -                | -                | -                 | -                 | -                 | -                 | -                | -                 | -                 | 9579.5266         | 9579.5266         | 9579.5266         |
| Asam Format (CHOOH)   | -                     | -                | -                | -               | -                | -                | -                 | -                 | -                 | -                 | -                | -                 | -                 | 1946.9529         | 1946.9529         | -                 |
| Air (H <sub>2</sub> O)  | 93.9775               | 93.9775          | 93.9775          | 27.9113         | 0.2819           | 0.2819           | -                 | -                 | 5131.8344         | 5131.8344         | 5815.9285        | -                 | -                 | 6593.4014         | 6593.4014         | 6593.4014         |
| <b>Total</b>  | <b>9397.7499</b>      | <b>9397.7499</b> | <b>9397.7499</b> | <b>121.6069</b> | <b>9276.1430</b> | <b>9276.1430</b> | <b>21702.8125</b> | <b>21702.8125</b> | <b>30978.6736</b> | <b>30978.6736</b> | <b>5815.9285</b> | <b>17170.8815</b> | <b>17170.8815</b> | <b>19623.7206</b> | <b>19623.7206</b> | <b>17676.7677</b> |