

1. 断面修復工(左官工法)

1) 上部工

①カッター工 (t=10mm)

$$L = 1581 \text{ cm} = 15.81 \text{ m}$$

②はつり工

$$A = 5278 \text{ cm}^2 = 0.5278 \text{ m}^2 = 0.528 \text{ m}^2$$

③ポリマーセメントモルタル工

$$V = 12685 \text{ cm}^3 = 0.012685 \text{ m}^3 = 0.013 \text{ m}^3$$

④残滓処分(無筋コンクリート殻: $\gamma = 2350 \text{ kg/m}^3$)

$$V = 12685 \text{ cm}^3 = 0.012685 \text{ m}^3 = 0.013 \text{ m}^3$$

$$W = 29.84 \text{ kg} = 0.030 \text{ t}$$

2) 下部工(A1橋台)

①カッター工 (t=10mm)

$$L = 2797 \text{ cm} = 27.97 \text{ m}$$

②はつり工

$$A = 8628 \text{ cm}^2 = 0.8628 \text{ m}^2 = 0.863 \text{ m}^2$$

③ポリマーセメントモルタル工

$$V = 33723 \text{ cm}^3 = 0.033723 \text{ m}^3 = 0.034 \text{ m}^3$$

④残滓処分(無筋コンクリート殻: $\gamma = 2350 \text{ kg/m}^3$)

$$V = 33723 \text{ cm}^3 = 0.033723 \text{ m}^3 = 0.034 \text{ m}^3$$

$$W = 79.26 \text{ kg} = 0.079 \text{ t}$$

3) 下部工(A2橋台)

①カッター工 (t=10mm)

$$L = 1050 \text{ cm} = 10.50 \text{ m}$$

②はつり工

$$A = 20260 \text{ cm}^2 = 2.0260 \text{ m}^2 = 2.026 \text{ m}^2$$

③ポリマーセメントモルタル工

$$V = 21520 \text{ cm}^3 = 0.021520 \text{ m}^3 = 0.022 \text{ m}^3$$

④残滓処分(無筋コンクリート殻: $\gamma = 2350 \text{ kg/m}^3$)

$$V = 21520 \text{ cm}^3 = 0.021520 \text{ m}^3 = 0.022 \text{ m}^3$$

$$W = 50.57 \text{ kg} = 0.051 \text{ t}$$

2. 表面保護工(表面被覆工:高分子系浸透性防水材)

1) 上部工

・床版

$$\begin{aligned}
 a1 &= 9.150 \times 0.660 - 0.050^2 \times 3.14 \times 2 &= 6.02 \text{ m}^2 \\
 a2 &= 9.150 \times 1.020 &= 9.33 \text{ m}^2 \\
 a3 &= 9.150 \times 1.020 &= 9.33 \text{ m}^2 \\
 a4 &= 9.150 \times 1.020 &= 9.33 \text{ m}^2 \\
 a5 &= 9.150 \times 1.020 &= 9.33 \text{ m}^2 \\
 a6 &= 9.150 \times 0.660 - 0.050^2 \times 3.14 \times 2 &= 6.02 \text{ m}^2 \\
 a7 &= 0.400 \times 0.300 \times 2 + 5.500 \times 0.090 &= 0.74 \text{ m}^2 \\
 a8 &= 0.400 \times 0.300 \times 2 + 5.500 \times 0.090 &= 0.74 \text{ m}^2 \\
 \Sigma &= 50.84 \text{ m}^2
 \end{aligned}$$

2) A1橋台

・下流側側面

$$\begin{aligned}
 a1 &= 0.900 \times 0.700 + (0.900 + 0.300)/2 \times 0.215 &= 0.76 \text{ m}^2 \\
 a2 &= 0.850 \times 0.270 + (0.850 + 0.800)/2 \times 0.050 &= 0.27 \text{ m}^2 \\
 a3 &= (0.800 + 1.010)/2 \times 0.680 &= 0.62 \text{ m}^2 \\
 \Sigma A &= 1.65 \text{ m}^2
 \end{aligned}$$

・正面

$$\begin{aligned}
 b1 &= 0.430 \times 6.700 &= 2.88 \text{ m}^2 \\
 b2 &= (6.700 + 6.000)/2 \times 0.215 &= 1.37 \text{ m}^2 \\
 b3 &= 6.000 \times 0.270 + 6.000 \times 0.063 + 6.000 \times 0.712 &= 6.27 \text{ m}^2 \\
 \Sigma B &= 10.52 \text{ m}^2
 \end{aligned}$$

・上流側側面

$$\begin{aligned}
 c1 &= 0.900 \times 0.700 + (0.900 + 0.300)/2 \times 0.215 &= 0.76 \text{ m}^2 \\
 c2 &= 0.850 \times 0.270 + (0.850 + 0.800)/2 \times 0.050 &= 0.27 \text{ m}^2 \\
 c2 &= (0.800 + 1.010)/2 \times 0.680 &= 0.62 \text{ m}^2 \\
 \Sigma C &= 1.65 \text{ m}^2
 \end{aligned}$$

・橋座部

$$\begin{aligned}
 d1 &= 6.000 \times 0.550 - 0.400 \times 0.300 \times 5 &= 2.70 \text{ m}^2 \\
 \Sigma &= 16.52 \text{ m}^2
 \end{aligned}$$

3)A2橋台

・下流側側面

$$\begin{aligned}
 a1 &= 0.900 \times 0.700 + (0.900 + 0.300)/2 \times 0.215 &= 0.76 \text{ m}^2 \\
 a2 &= 1.181 \times 0.300 + (1.181 + 1.107)/2 \times 0.071 &= 0.44 \text{ m}^2 \\
 a3 &= (1.107 + 1.122)/2 \times 0.650 &= 0.72 \text{ m}^2 \\
 \Sigma A &= 1.92 \text{ m}^2
 \end{aligned}$$

・正面

$$\begin{aligned}
 b1 &= 0.430 \times 6.700 &= 2.88 \text{ m}^2 \\
 b2 &= (6.700 + 6.000)/2 \times 0.215 &= 1.37 \text{ m}^2 \\
 b3 &= 4.900 \times 0.300 + 4.900 \times 0.071 + 4.900 \times 0.650 &= 5.00 \text{ m}^2 \\
 \Sigma B &= 9.25 \text{ m}^2
 \end{aligned}$$

・上流側側面

$$\begin{aligned}
 c1 &= 0.900 \times 0.700 + (0.900 + 0.300)/2 \times 0.215 &= 0.76 \text{ m}^2 \\
 c2 &= 1.181 \times 0.300 + (1.181 + 1.107)/2 \times 0.071 &= 0.44 \text{ m}^2 \\
 c2 &= (1.107 + 1.122)/2 \times 0.650 &= 0.72 \text{ m}^2 \\
 \Sigma C &= 1.92 \text{ m}^2
 \end{aligned}$$

・橋座部

$$\begin{aligned}
 d1 &= 4.900 \times 0.550 + 0.550^2 \times 3.14 / 4 \times 2 - 0.400 \times 0.300 \times 5 &= 2.57 \text{ m}^2 \\
 \Sigma &= 15.66 \text{ m}^2
 \end{aligned}$$

・保護面積合計

$$\begin{aligned}
 \Sigma A &= \quad + \quad + 50.84 + 16.52 + 15.66 \\
 &= 83.0 \text{ m}^2
 \end{aligned}$$

3. 水切り工

$$L = 9.150 \times 2 = 18.3 \text{ m}$$