

NEEP - HOPS Data

Activity	Soil type	Component	Method / mode of Installation	Plant and equipment	Outputs / productivity					Any Line Open/Adjacent Line Open (ALO)	Labour: Rosters required to operate 6 shifts/week along with competencies - note that no of personnel on train varies depending on density of work (also pooled resources and general resources are excluded - such as COSS, drivers etc...)	Limitation - railway, track, environment, material etc. limitations	Limitation - HOPS system limitations	Travel speed on mainline (mph)	Travel speed in possession	Travel speed in work site
					standard cycle time / unit	cycle times for Pile Length changing (% of the 6m 610 mm dia standard): -50% (3m), -25% (4.5m), +25% (7.5m), max 8m	Best achieved	Long term average based on 610 mm dia. CHS Piles <=6 m length	TRA as a % of best achieved							
Steel piling	Very soft	610 / 762 mm dia. Circular Hollow Section (CHS) Steel Piles	HOPS Piling Consist 1A	12min	6 min, 9 min, 15 min, 16min	25 Piles / Shift	17 Piles / shift 28 Piles /shift (with Optimised working time)	3.5 hrs 6hrs (when Optimised)	30 x <=6m length 610 mm dia. (15 on each Wagon) 24 x <= 6m length 726 mm dia. (12 on each Wagon) 20 x 8 m length 610 mm dia. (10 on each Wagon)	The HOPS train can deliver works in ALO possessions which reduces schedule 4 costs and allows for longer working time but requires longer term planning	35 Including team leader, piling supervisor, crane operator, aux piling operative, handback engineer, foundation site engineer, planner track monitoring, setting out engineer etc...	The HOPS train can not deliver at stations, tunnels and junctions. Also, the production rate will decrease with non uniform material loaded and or larger or heavier members (e.g.: spliced piles, heavy steel booms, longer masts).	The longest pile HOPS can carry and install for 610/762 mm dia are respectively 8m/6m (as the vibrator head can grip maximum 2 T of weight) HOPS also has a maximum walkout of 5.5 m from rail edge, for the highest cant case	60	15	5
	Soft			15min	8 min, 12 min, 19 min, 20 min		14 Piles / shift 24 Piles /shift (with Optimised working time)									
	Medium			20min	10 min, 15 min, 25 min, 27 min		10 Piles / shift 18 Piles /shift (with Optimised working time)									
	Hard			30min	15 min, 23 min, 38 min, 40 min		7 Piles / shift 12 Piles /shift (with Optimised working time)									
	Very hard			60min	30 min, 45 min, 75 min, 80 min		3 Piles / shift 6 Piles /shift (with Optimised working time)									
Mast/struts installation	Not applicable	Masts HEB , TTC, 250x250mm, 500x350 <= 9.5 m in length Strut 160 x 160 OR 200 x 200 Mast 500 x 300SHS for Portal (2 Chairs) Mast 350 x 350SHS for TTC-C (2 Chairs)	HOPS steelwork consist 2A (masts and booms)	Respectively (by type of component) 10 min to 15 min 20 min 30 min 30 min	Not applicable	18 steel / shift (36 when masts-struts laid in the cess before)	Respectively (by type of component) 15 steel / shift 24 Steel / shift (with optimised working time) 10 steel / shift 18 Steel / shift (with optimised working time) 7 steel / shift 12 Steel / shift (with optimised working time)	3.5 hrs 6hrs (when Optimised)	24 of Masts HEB Series One (UKMS greater capacity) 24 of Masts 250x250mm 10-15 of TTC types 10 of Masts 500x350mm 10 of Mast 500 x 300SHS for Portal (2 Chairs) 10 of Mast 350 x 350SHS for TTC-C (2 Chairs)	Ditto	Ditto	Can lift any mast or boom it can carry	60	15	5	
Boom installation (portal)	Not applicable	600 x 600 Q80-100 Anchor boom 360/270 (under 19.5 m) WPE 430 (under 19.5 m) WEB 450 (under 19.5 m) TTC-A/B/C		Respectively (by type of component) 45 min 150 min 150 min 150 min 15-20 min	Not applicable	Not applicable	Respectively (by type of Component) 4 Booms / shift 7 Booms / shift (with Optimised working time) 1 Booms / shift 2 Booms / shift (with Optimised working time) 1 Booms / shift 2 Booms / shift (with Optimised working time) 12 Booms / shift 20 Booms / shift (with Optimised working time)	3.5 hrs 6hrs (when optimised)	4 No. 600 x 600 Q100 21 m max length 2 Anchor Boom 360/270 (under 19.5 m) 2 WPE 430 (under 19.5 m) 2 WEB 450 (under 19.5 m) 16 TTC-A/B 6 No. TTC-C	Ditto	Ditto	Can lift any mast or boom it can carry	60	15	5	
SPS installation (Small Parts Steel)	Not applicable	Small parts steel (single insulated cantilevers SIC, Tensorex, drop tubes, earth wire EW SPS and autotransformer feeder ATF SPS etc...)	HOPS SPS consist 2B1 (SPS + EW and ATF wires)	10 min (for single insulated cantilever SIC SPS)	Not applicable	30 SIC / shift	20 SIC / shift 30 SIC / shift (with optimised working time)	3.5 hrs 6hrs (when optimised)	30 if Single Insulated Cantilever SIC SPS varies for other SPS items	Ditto	22 Including supervisor, construction manager, construction supervisor, construction assistant, MOD driver/operator, OLEC linesman, OLE engineer	Ditto	60	15	5	
Earth wire and autotransformer feeder Wire installation	Not applicable	Earth wire (EW) and autotransformer feeder wire (ATFW)		240 min for a EW or/and ATFW wire run up to 1.4 Km (avg. 1.1 Km)	Not applicable	2 Wire runs / Shift (i.e. 2 of EW or ATF wire)	2 wire runs / shift (EW or/and ATF wire) 4 wire runs / shift (EW or/and ATF wires - with optimised working time)	4 hrs 8hrs (when optimised)	4 wire drums (each is around 1.4 Km of wires)	Ditto	Ditto	60	15	5		
Overhead line contact and catenary wire installation	Not applicable	Contact and catenary wires	HOPS wiring consist 2B2 + consist 3 (registration)	240 min for a contact and catenary tension length wire run up to 1.4 Km (avg. 1.1 Km)	Not applicable	2 wire runs / shift (i.e. 2 of contact and 2 catenary wires)	1 wire run / shift (i.e. 1 contact and 1 catenary wires) 2 wire runs / shift (i.e. 2 contact and 2 catenary wires - with optimised working time)	4 hrs 8hrs (when optimised)	4 wire drums (each is around 1.4 Km of wires)	Ditto	37 Including construction manager, construction assistant, supervisor, OLEC linesman, supervisor, engineers	Ditto	60	15	5	