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**BAULDERSTONE
HORNIBROOK**



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BAULDERSTONE HORNIBROOK PTY. LTD

PRODUCTIVITY RATES

DRAFT

AUGUST 1996

AIR CONDITIONING

FABRICATION

Sheetmetal duct - in shop condition (using 20 gauge duct)	0.56 hrs / m ²
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MULTI-STOREY HOTEL R/I

Pipework	0.008 mhr / m ²
Ductwork	0.128 mhr / m ²
Induction units	approx. 0.60 mhr / m ²
Lagging	0.048 mhr / m ²

MULTI-STOREY OFFICE R/I

Ductwork (including risers)	0.3 - 0.45 mhr / m ²
Induction units	0.66 mhr each
Pipe connectins to units, including testing & lagging	4 mhrs each

AIR CONDITIONING PLANTROOM - AVERAGE MULTI-STOREY OFFICE

Install A/C plant complete	0.37 mhr / m ²
<i>Note:</i> All materials pre hoisted	
<i>Gang:</i> Nominal gang of eight men	

BRICKWORK / BLOCKWORK

BLOCK

	No. Per m ²	mhrs / m ²
390 x 190 x 90 hollow	25	0.80
390 x 190 x 90 solid	25	0.90
390 x 90 x 190 hollow	12.5	0.725
390 x 90 x 190 solid	12.5	0.78
390 x 140 x 190 hollow	12.5	0.78
390 x 140 x 90 solid	12.5	0.86
390 x 190 x 190 hollow	12.5	0.92
390 x 190 x 190 solid	12.5	0.97

BRICKS

390 x 90 x 90 (modular)	25	1.00
230 x 110 x 76 (standard)	50	1.25

(Allow 1 labourer to 3 bricklayers)

HANDLING

By crane, with stillages & cage, crew of 4 men	
- 90mm wide blocks	400 per hr
- 140 mm wide blocks	240 per hr
- 190 mm wide blocks	180 per hr
- bricks	1670 per hr
By hoist & barrows - bricks	100 per hr
By hoist & pallet trolleys or brick packs	2500 per hr
Multi-storey hoist tower platform brick barrows	1000 per hr
<i>Gang: 6 brick barrows required; 2 men up on slab, 2 men below</i>	

BRICKLAYING

220 mm brickwork face 1 side	0.58 mhrs / m ²
270 mm cavity, face 1 side	0.50 mhrs / m ²
100 mm modular, face brickwork	1.24 mhrs / m ²
110 mm modular, face brickwork	0.93 mhrs / m ²
110 mm common brickwork	1.13 mhrs / m ²

BLOCKLAYING

150 mm blockwork, denseweight	1.16 mhrs / m ²
100 mm blockwork, denseweight and lightweight	1.38 mhrs / m ²
200 mm blockwork, denseweight	1.03 mhrs / m ²
100 mm blockwork, lightweight	1.09 mhrs / m ²

Note: one brick / block layer for each 5 m of wall and no lift should be higher than 1350mm.

CONCRETE - BREEZEBLOCK (SCREEN WALL)	0.60 mhrs / m ²
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GLASS BLOCK 196 X 196 X 98 MM	2.44 mhrs / m ²
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STONE BLOCKWALLS	4.00 mhrs / m ²
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OTHER COMMONS

1.5 brickwall (150 bricks / m ²)	2.14 mhrs / m ²
brick on edge partition (38 bricks / m ²)	1.08 mhrs / m ²
brick on edge partition (small quantities)	1.52 mhrs / m ²
double skin	2.00 mhrs / m ²
double skin, arcjes	16.00 bricks / hr
double skin, curved in plan	2.50 mhrs / m ²
mass brickwork	80.00 bricks / hr

single skin	1.00 mhrs / m ²
single skin, curved in plan	1.51 mhrs / m ²
solid 215mm wall	1.66 mhrs / m ²

CLEANING WALLS 0.23 mhrs / m²

CAULK WITH COMPOUND 0.05 mhrs / m²

CARPENTRY

BATTENS

Nailed to partitions	0.04 hrs / m
Nailed to rafters and studs	0.02 hrs / m
Plugged to Walls	
- 450 mm centres	0.23 hrs / m

CAULKING OPENINGS

With pressure gun	0.05 hrs / m
Without pressure gun	0.08 hrs / m

DECKING

Timber	
- 100 x 50 mm close nailed	1.75 hrs / m ²
- 100 x 50 with 25 mm gaps	1.50 hrs / m ²

DOOR / WINDOW OPENING FRAME

Frame	
- 100 x 50 mm nailed to ground	0.15 hrs / m
Frame	
- 100 x 50 mm plugged to walls	0.32 hrs / m

Note: See doors / door frames, windows / window frames

EAVES LINING

Compressed fibrous cement sheet	
- fixed to timber frame 0 - 2 m wide	0.55 hrs / m ²
- fixed to timber frame 2 - 4 m wide	0.52 hrs / m ²
- fixed to timber frame 4 m + wide	0.50 hrs / m ²
Hardboard	
- 3 mm thick fixed to timber frame	0.42 hrs / m ²

EXTERIOR TRIM

Blind or shutters	1.25 hrs / pair
Moulding	0.13 hrs / m
Porch columns - average	1.50 hrs each
Porch rail and baluster	1.10 hrs / m
Verge Board	0.32 hrs / m
Wood Threshold	0.50 hrs each

FASCIA AND BARGES

Timber - Softwood	
- 200 x 25 fixed to rafters	0.30 hrs / m

FIXINGS

Brick wall	
- drill for 12 mm dia masonry anchor	0.10 hrs each
Concrete wall	
- drill for 12 mm dia masonry anchor	0.13 hrs each
Steel Angle	
- drill for 6/12 mm dia bolt	0.13 hrs each
Timber	
- drill for 6/12 mm dia bolt	0.05 hrs each

FLOOR - T & G

Timber Hardwood	
- 100 x 25 mm cut down, nail, punch	0.37 hrs / m ²
Timber Softwood	
- 100 x 25 mm (norm) cut down, nail, punch	0.34 hrs / m ²

FLOOR FRAMING

Strutting - Softwood	
- 50 x 30 mm herringbone measured between joists	0.41 hrs / m ²

FLOOR FRAMING - BEARERS

Timber - Hardwood	
- ground floor 100 x 75 mm @ 180 mm centre	0.15 hrs / m ²

FLOOR FRAMING - JOIST

Timber - Hardwood	
- ground floor 100 x 50 mm @ 450 mm centre	0.09 hrs / m ²

Timber - Softwood	
- ground floor 250 x 50 mm @ 450 mm centre	0.27 hrs / m ²

GROUPS / FURRING

Double	
- nailed to partitions and studs	0.07 hrs / m
- plugged to walls	0.40 hrs / m
Double - Frame	
- nailed to partitions and studs	0.15 hrs / m
- plugged to walls	0.53 hrs / m
Single	
- nailed to partitions and studs	0.05 hrs / m
- plugged to walls	0.18 hrs / m

INSULATION

Aluminium Foil - over steel or timber framing	0.05 hrs / m ²
Batt Insulation - between steel or timber framing	0.11 hrs / m ²
Flexible Roll	0.12 hrs / m ²
Foam Glass	0.17 hrs / m ²
Granular Mineral	0.11 hrs / m ²
Insulating Lath	0.09 hrs / m ²
Rockwool Loose	0.10 hrs / m ²
Rockwool Strip	0.10 hrs / m ²
Vapor Seal Paper	0.02 hrs / m ²

INTERIOR TRIM

Architraves to Brick	
- 100 x 25 mm plugged include. plugging	0.30 hrs / m
Architraves to Timber Framing	
- 100 x 25 mm	0.12 hrs / m
Beam Casing	0.13 hrs / m
Chair Rail	0.10 hrs / m
Mouldings	0.09 hrs / m
Picture Rail	
- 50 x 25 mm fixed to brick walls	0.19 hrs / m
- fixed to timber	0.09 hrs / m
Skirting	
- 150 x 25 mm - fixed to brick	0.24 hrs / m
- 150 x 25 mm - fixed to timber	0.14 hrs / m
- 75 x 25 mm - fixed to brick	0.22 hrs / m
- 75 x 25 mm - fixed to brick	0.12 hrs / m

Wood Handrail	0.45 hrs / m
REVEAL LININGS	
19 mm thick fixed to frame including plugging	0.30 hr / m
ROOF - CEILING HANGERS	
Timber Softwood	
- 200 x 38 mm fixed to ceiling joists	0.21 hr / m
ROOF - CEILING JOISTS	
Timber Softwood	
- 100 x 50 mm @ 450 mm centre	0.10 hr / m
ROOF FRAMING	
Ceiling Beams	
- 150 x 75 mm	0.20 hr / m
Ceiling Joists	
- 150 x 50 mm	0.10 hr / m
Collar Ties	
- 75 x 50 mm	0.13 hr / m
- 125 x 50 mm	0.12 hr / m
Purlins	
- 100 x 75 mm	0.26 hr / m
Rafters	
- 100 x 50 mm	0.17 hr / m
Ridge Boards	
- 175 x 25 mm	0.19 hr / m
Struts	
- 150 x 50 mm	0.12 hr / m
Trusses - Frabricated - 6m Span	
- erection	0.9 hr each
Trusses - Frabricated - 12m Span	
- erection	1.4 hr each
Wall Plates	
- 100 x 50 mm	0.13 hrs / m
SHELVING	
Metal	
- Brownbuilt 2.1 m high x 0.42 m deep x 0.4 m wide	017 hrs / unit

Note: Procurement 4 weeks

Timber

- 25 mm thick fixed to ladder brackets & fixing incl.	4.25 hrs / m ²
- bank of shelves	4.34 hrs / m ²
- single shelf	0.17 hrs / m ²

SIGN

Small

- internal door name / number	0.25 hrs each
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STAIRS

Timber

- include. landings / balusters - built on site	9.00 hrs / m rise
- include. landings / balusters - prefabricated	3 hrs / m rise

SUNDRY

Hat and coat rail

- 100 x 25 mm plugged to brick	0.20 hrs / m
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Quad fillet to timber

0.60 hrs / m

Seat Batten

- 75 x 38 mm fixed to metal	0.13 hrs / m
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WALL FRAMING

Timber - softwood

- 100 x 50 mm @ 450 include plates, nogging, trimming	0.14 hrs / m
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WEATHERBOARD

150 x 25 mm

- fixed to timber frame	0.6 hrs / m ²
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- to gable ends etc	0.6 hrs / m ²
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Corner Board

0.1 hrs / m

CARPET

BROADROOM

Column

- glued

0.27 hrs / m²

Floor

	- glued on slab	0.10 hrs / m ²
	- on underlay	0.15 hrs / m ²
Wall		
	- glued	0.21 hrs / m ²

CEILING

ACOUSTIC TILE

Grid		
	- for acoustic tile	0.34 hrs / m ²
Tiles		0.16 hrs / m ²

COMP. FIBRE CEMENT SHEET FIXED TO BATTENS

0.60 hrs / m²

ILLUMINATED GRID & TILE

Grid		
	- for illumated ceiling	0.34 hrs / m ²
Tile		0.16 hrs / m ²

METAL PLAN

Grid		
	- for metal plan ceiling	0.40 hrs / m ²
Tile		0.17 hrs / m ²

PLASTERBOARD

Cornice		
	- 75 mm inc. tape and set joints	0.15 hrs / m
Furring Channel Grid System		
	- to receive plasterboard sheets	0.40 hrs / m ²
Sheet		
	- fix / tape / set 10 mm	0.40 hrs / m ²

PLASTERBOARD

Grid		
	- for plasterboard tile	0.34 hrs / m ²
Tile		0.16 hrs / m ²

PLYWOOD

Sheet		
	- fixed to timber frame	0.30 hrs / m ²

STRAMIT WALK-ON CEILING

Grid/Tile

- walk on (1200 x 750 mm tiles)

0.60 hrs / m²

Note: Grid and tile usually fixed at the same time

VERMICULITE SPRAY

1 Coat

0.60 hrs / m²

2 Coats

- approx 9 mm thick

1.2 hrs / m²

CLEARING SITE

CLEAR TREES & BRUSH

Heavy timbered - with dozer

- include pile and burn

27 hrs / hectare

Medium timbered - with dozer

- include pile and burn

16.20 hrs / hectare

Light Timbered - tractors and cable

0.65 hrs / hectare

Light Timbered - with dozer

- include pile & burn

11.85 hrs / hectare

REMOVE TREE STUMPS

200 - 350 mm Diameter

- blast and pull with tractor

0.83 hrs each

- grub and remove by hand

6.00 hrs each

350 - 450 mm Diameter

- blast and pull with tractor

1.50 hrs each

450 - 600 mm Diameter

- grub and remove by hand

9.00 hrs each

REMOVE TREE

200 - 350 mm Diameter

- by hand

7.88 hrs each

- with chain saw

1.97 hrs each

350 - 450 mm Diameter

- by hand

10.50 hrs each

450 - 600 mm Diameter

- by hand

16.50 hrs each

TURF

By hand - cut / strip / stack

0.25 hrs / m²

CONCRETE

DELIVERY RATE

By Hand, Using Barrows	9 m ³ / hr
By Mobile Crane With Two 1 M ³ Skips	15 m ³ / hr
By Tower Crane With Two 2 M ³ Skips	25 m ³ / hr
By Concrete Pump (To Any Height)	30 m ³ / hr
Direct Pour From Truck, Per Discharge Point	60 m ³ / hr

PLACING LABOUR RATES

Strip footings	1.5 man hr / m ³
Mass concrete in ground	0.25 - 1.0 man hr / m ³
Floor slabs	0.33 - 1.25 man hr / m ³
Power floating (pours normally not more than 500m ²)	0.07 man hr / m ²
Shovel finish	0.25 man hr / m ²
Screeds & toppings 50 - 75 mm (excl. finishing)	0.12-0.15 man hr / m ²
Columns	4 - 10 man hr / m ³
Walls	2 - 5 man hr / m ³
Beams	2.5 - 8 man hr / m ³

MEMBRANE

Polythene Sheet	0.08 hrs / m ²
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BLINDING

50 mm Thick	0.22 hrs / m ²
75 mm Thick	0.23 hrs / m ²

CONSTRUCTION JOINTS

Expansion joint and felt	0.06 hrs / m
Membrane	0.06 hrs / m
Water Stop	
- Metal	0.13 hrs / m
- Rubber	0.10 hrs / m

Rule-of-Thumb:

- Concrete pours should not normally exceed 150m³/day; discharge time for this quantity of concrete with 1 pump is 20 - 30 m³ / hr
- Large pours than 150 m³ require 2 gangs and two pumps.
- Concrete should be laid by 1 p.m. latest to permit power floating

MULTI-STOREY REPETITIVE MIN. 200 MM SLAB

Receiving hopper, hoist tower, upper hopper,
concrete runs and barrows 14 m³ / hr

Gang:

1 leading hand, 1 vibrator, 1 shovel, 6/8
barrows, possible 1 receiving hopperman.

Note:

This rate applicable to typical multi-storey
work above ground only. Below ground
level barrows are used and the receiving
hopper is fed by chute from the transit
mixer, these conditions plus heavier steel
limit the rate to 9.4 m³ / hr and the daily
pour to 53 m³.

SINGLE-STOREY HORIZONTAL REPETITIVE MIN. 200 MM SLAB

Mobile Crane luffing and slewing jib, 0.5m bottom
dump buckets 16 m³ / hr

Gang:

1 lower man, 1 receiver, 2 vibratormen, 1
spreader

CONCRETE FINISHING

INTEGRAL TOPPINGS

Screed Concrete, mix hoist and apply dryers, steel
towel finish 55 m² / man / day

Gang:

Multiples of 2, usually 4 men

BROOM FINISH 0.03 hrs / m²

BUSH HAMMER 0.03 hrs / m²

BUSH HAMMER - RIBBED 0.03 hrs / m²

CEMENT WASH 0.03 hrs / m²

EXPOSED AGGREGATE (WHILE GREEN) 0.62 hrs / m²

HARDENER - LIQUID CHEMICAL

- clean old surface 0.32 hrs / m²

- one coat hardener 0.10 hrs / m²

HARDENER - METALLIC GROUT HARDENER

- clean old surface 0.32 hrs / m²

- one coat hardener 0.21 hrs / m²

PLASTIC PROTECTION

- after pour and trowel 0.02 hrs / m²

POLISH SURFACE

- after rubbing down with stone and sand 1.93 hrs / m²

REMOVE FINS OR TIES, POINT AND PATCH

0.32 hrs / m²

SCABBLINGS

- slab 0.45 hrs / m²

- soffits 1.20 hrs / m²

- Wall 0.62 hrs / m²

SCREEDING OFF

0.32 hrs / m²

TROWEL

- hand steel 0.24 hrs / m²

- machine 0.12 hrs / m²

JOINT FILLING

Mastic compound 0.10 hrs / m

COOL ROOM

SMALL COOL / COLD ROOM

5 days each

3 m x 3 m Plan 2.4 m Height

Note: 2 man crew

This unit is built freestanding within an existing room

Include. walls, concrete screed floor, compressor, condensor, electrics and test

CORK FLOOR FINISHES

TILE FLOOR - INCLUDING CLEAR URETHANE FINISH 0.50 hrs / m²

DOORS / DOOR FRAMES

INTERIOR DOORS

Timber - Single

Single - exclude lockset / furniture 1.2 hrs each

Note: Rate for double doors = single x 1.5

Single - include lockset / furniture 2.0 hrs each

Note: Rate for double doors = single x 1.5

ROLLER SHUTTER DOORS

Domestic - 2.1 x 2.4 m 4.00 hrs each

Industrial - 3 x 3 m 6.00 hrs each

Note: Additional work required by electrician if motor operated

SCREEN DOORS

Doors and Hardware 2.25 hrs each

SLIDING DOOR

Doors and Hardware 3.20 hrs each

STRONGROOM DOORS

Fireproof - strong room type 0.50 hrs / 50 kg

BI - FOLD

Tract / Doors / Hardware 1.30 hrs / m

Note: Rate is for first meter, 0.3 hrs for each additional metre

DOOR FRAMES

Setout / Stand

- for block / brickwork 0.50 hrs each

Timber

- transoms to door frames into brick or stud wall 0.50 hrs each

Timber Double Frame

- into brick or stud wall 1.40 hrs each

Timber Single Frame

- into brick or stud wall 1.20 hrs each

EXTERIOR DOORS

Hollow Metal - Double Swing	
- including frame, door, trim, transom	15.60 hrs / pair
Hollow Metal - Single Swing	
- including frame, door, trim, transom	9.50 hrs / pair
Pressed Steel - Double Slide	
- including frame, track, hangers, doors, hardware	32.00 hrs / pair
Pressed Steel - Double Swing	
- including frame, doors, hardware	20.10 hrs / pair
Pressed Steel - Single Slide	
- including frame, track, hangers, doors, hardware	16.00 hrs / pair
Timber - Double Swing	
- including lockset / furniture	4.55 hrs each
- pivot hang - double action floor springs	5.00 hrs each
Timber - Single Swing	
- including lockset / furniture	2.30 hrs each

HARDWARE

Barrel Bolts - 150 mm	0.50 hrs each
Check or Spring Hinge	1.80 hrs each
Door Closer	1.00 hrs each
Full Mortised Butt Hinges	0.15 hrs each
Half Mortised Butt Hinges	0.10 hrs each
Kick Plate	1.25 hrs each
Lock and Furniture	
- exterior	0.75 hrs each
- interior	0.66 hrs each
Mortised Lock	1.6 hrs each
Panic Bolts / Push Bars	3.20 hrs each

HUFCOR DOORS

Doors and Hardware	
- operable walls (2 man crew)	0.66 hrs / m
Track	
- operable walls (2 man crew)	0.25 hrs / m

DEMOLITION

ASBESTOS

Remove Fire Spray	10.00 hrs / m ²
Remove Sheet	0.70 hrs / m ²
Remove Tiles	1.00 hrs / m ²

FLOORING

Ceramic / Quarry Tile - Remove	0.08 hrs / m ²
Cork Tile - Remove	0.08 hrs / m ²
Linoleum - Remove	0.02 hrs / m ²
Terrazzo - Remove	0.07 hrs / m ²
Timber - Remove	0.59 hrs / m ²
Vinyl / Rubber Tile - Remove	0.08 hrs / m ²

INTERNAL WALL

Plaster from Masonry - Remove	0.11 hrs / m ²
Plaster / Fibre Board - Remove	0.11 hrs / m ²
Plywood - Remove	0.12 hrs / m ²
Timber Frame - Remove	0.11 hrs / m ²

MASONRY

Hollow Wall	
- by hand	1.71 hrs / m ³
- by pneumatic pick	0.23 hrs / m ³
Solid Wall	
- by hand	1.70 hrs / m ³
- by pneumatic pick	0.30 hrs / m ³

PAVING

Brick	
- break up by hand	0.09 hrs / m ²
Concrete Paving, Floor Slabs etc.	
- break up by hand	0.50 hrs / m ²
Tarmac Surfacing	
- break up by hand	0.25 hrs / m ²

REINFORCEMENT CONCRETE

Columns	16 hrs / m ³
Slab on Ground	16 hrs / m ³
Reinforced Concrete	

- suspended slab	16 hrs / m ³
- wall	16 hrs / m ³

ROOFING

Built-up roofing - Remove	0.08 hrs / m ²
Corrugated Metal - Remove	0.14 hrs / m ²

SIDING

Timber - Remove	0.21 hrs / m ²
Corrugated Metal - Remove	0.13 hrs / m ²

STRUCTURAL TIMBER

Framing - Remove	0.03 hrs / m
Roof Timber - Remove	0.04 hrs / m

ELECTRICAL SERVICES

MULTI-STOREY HOTEL

Gang: 2 men chasing out + 3 men wiring

0.24 mhrs / m²

MULTI-STOREY OFFICE

Conduit in slab (where all wiring is in slab)	0.25 mhrs / m ²
Connection of sub-board via rising mains in ducts to main switchboard	0.04 mhrs / m ²
Draw wiring	0.5 - 1mhrs/outlet
Install, connect & test power outlet, switch etc.	0.25 - 0.5 mhrs/unit

AUTIO

Audio Cable	
- in conduits	0.08hrs / m
- on cable tray in ceiling space	0.10 hrs / m
Horns on wall	1.25 hrs each
Speakers in ceiling	1.00 hrs each

CABLES

4 core & earth PVC circular on tray	
- 2.5 mm ²	0.08 hrs / m
- 6.0 mm ²	0.11 hrs / m
- 16 mm ²	0.17 hrs / m
- 35 mm ²	0.23 hrs / m
- 95 mm ²	0.42 hrs / m

- 150 mm ²	0.59 hrs / m
4 core MIMS / PVC on tray	
- 4.0 mm ²	0.19 hrs / m
- 6.0 mm ²	0.21 hrs / m
- 10 mm ²	0.25 hrs / m
- 16 mm ²	0.29 hrs / m
- 25 mm ²	0.35 hrs / m
Single core MIMS / PVC on tray	
- 6.0 mm ²	0.11 hrs / m
- 10 mm ²	0.13 hrs / m
- 25 mm ²	0.17 hrs / m
- 50 mm ²	0.23 hrs / m
- 70 mm ²	0.25 hrs / m
- 120 mm ²	0.32 hrs / m
TPI cable in conduit	
- 2.5 mm ²	0.03 hrs / m
- 6 mm ²	0.04 hrs / m
- 25 mm ²	0.05 hrs / m
- 90 mm ²	0.09 hrs / m
CABLE TRAY TO CEILINGS	0.66 hrs / m
COMMUNICATIONS	
Communication Outlets	0.25 hrs each
Optical Fibre - jointing	0.66 hrs / joint
CONDUIT	
Cast into suspended concrete slab	
- 20 mm	0.05 hrs / m
- 25 mm	0.06 hrs / m
- 32 mm	0.08 hrs / m
Fixed to Masonry	
- 20 mm	0.15 hrs / m
- 32 mm	0.18 hrs / m
- 50 mm	0.22 hrs / m
Fixed within suspended ceiling space	
- 20 mm	0.11 hrs / m
- 32 mm	0.12 hrs / m
- 50 mm	0.15 hrs / m

Electric clock	0.25 hrs each
General power outlets	0.25 hrs each

EPOXY FINISHES

Floor

To Concrete	0.02 hrs / m ² / coat
<i>Note:</i> Generally requires 1 day cure per coat & 48 hrs drying prior to final traffic Also allow for acid etch (with machine) @ 125 m ² / hr plus 2 days drying prior to epoxy	
To Timber	0.02 hrs / m ² / coat

EXCAVATION

BACKFILL ONLY, NO COMPACT

By Hand	1.60 hrs / m ³
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BACKFILL, SPREAD & LEVEL

By Hand	
- average soil	1.00 hrs / m ³
- gravel	0.52 hrs / m ³
- sand	0.46 hrs / m ³
By Machine - Bulldozer	
- gravel	0.04 hrs / m ³

BACKFILL / REFILL & COMPACT

By Hand	
- surface - in clay	1.60 hrs / m ³
- surface - in gravel	1.33 hrs / m ³
- surface - in loam	1.50 hrs / m ³
- trenches 1 m in clay	3.45 hrs / m ³
- trenches 1 m in gravel	3.03 hrs / m ³
- trenches 1 m in loam	2.79 hrs / m ³
- trenches 4 m in clay incl	3.84 hrs / m ³
- trenches 4 m in gravel	3.45 hrs / m ³
- trenches 4 m in loam	3.21 hrs / m ³
By Hand (Pneumatic)	
- surface - in clay	0.88 hrs / m ³
- surface - in gravel	0.72 hrs / m ³

- surface - in loam 0.80 hrs / m³

BULK EXCAVATION

By Machine - Bulldozer (D7/D8)

- gradient 1 in 7 down 0.01 hrs / m³
- gradient 1 in 7 up 0.02 hrs / m³
- level 0.01 hrs / m³

By Machine - Tractor and Scraper

- haul 100m 0.01 hrs / m³
- haul 500m 0.02 hrs / m³

By Hand

- average soil 1.60 hrs / m³
- hard rock 7.33 hrs / m³
- soft rock 4.67 hrs / m³

DETAILED EXCAVATION

By Hand

- average soil 3.00 hrs / m³
- hard rock 13.60 hrs / m³
- soft rock 8.50 hrs / m³

By Machine - Backhoe 0.4M3

- trenches 1 m in clay 0.11 hrs / m³
- trenches 1 m in gravel 0.10 hrs / m³
- trenches 1 m in loam 0.09 hrs / m³
- trenches 4 m in clay incl 0.13 hrs / m³
- trenches 4 m in gravel 0.11 hrs / m³
- trenches 4 m in loam 0.11 hrs / m³

OVER AREA

By Hand

- average soil 1.81 hrs / m³
- hard rock 8.80 hrs / m³
- soft rock 5.60 hrs / m³

JACK - HAMMERING CONCRETE 10 mhrs / m³

TRENCHING & PAD BY BACK-ACTER 0.2 - 0.15 hrs / m³

BULK EXCAVATION PER MACHINE 300 - 500 m³ / Day

BULK EXCAVATION IN GOOD CONDITIONS, up to 1000 m³ / Day

WITH CONTINUOUS SUPPLY OF TRUCKS

BACKFILLING TO TRENCHES

With D4 Dozer	17 m ³ / hr
With D8 Dozer	50 m ³ / hr

SPREAD & LEVEL HARDFILL

With D4 Dozer	14 m ³ / hr
With D8 Dozer	51 m ³ / hr

TRIM & GRADE EXCAVATION

With D4 Dozer	150 m ³ / hr
With D8 Dozer	300 m ³ / hr

BORED PILES IN FIRM CLAY, 400 - 1200 DIAMETER	50-60 lin.m. / day
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FRANKIPILES (BORED & RAMMED), AV. 10M. DEEP	4 - 5 / day
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DRILL FOR, PLACE & BACKFILL TEMPORARY SOLDIER PILES	4 - 6 / day
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DRILL, PLACE & GROUT GROUND ANCHORS (ALLOW 5 DAYS TO CURE & STRESS)	4 / drill rig
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SHORTCRETE APPLIED TO EARTH FACE - TROWEL FINISHES	20 - 25 m ² / day
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WELLPOINT SPEARS INSTALLATION	30 - 40 / day
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PLACE & CONSOLIDATE HARDFILL 150 THICK WITH 2.5 TONNE ROLLER	20 m ² / hrs
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SPREAD LEVEL & COMPACT SAND LAYER 50 - 75 THICK	25 m ² / mhr
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LAY & TAPE POLYTHENE DAMP PROOF MEMBRANE	40 m ² / mhr
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LAY 3 LAYERS BITUMINOUS FELT TANKING	1 m ² / mhr
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DEMOLISHING BRICK OR BLOCK WALLS	3 - 4 mhrs / m ³
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FENCING

CHAINLINK

1.8 m high including posts 1.25 hrs / m

2.4 m high including posts 1.27 hrs / m

Note: Additional 30% per meter of bracing
for corners and bracing

MESH

50 mm mesh including metal post 1.0 m high 1.17 hrs / m

TIMBER

Post / Rail and Paling - 1.8 m high 1.27 hrs / m

WIRE

Barbed - Single Strand

- fix to metal, timber and concrete posts 0.11 hrs / m

Single Strand

- fix to metal, concrete and timber posts 0.04 hrs / m

FLOOR SANDING

TIMBER

Hardwood 0.13 hrs / m²

Old floor for re-finish 0.38 hrs / m²

Softwood 0.19 hrs / m²

FLOOR - SPECIAL

INFINITE ACCESS FLOOR

Curved or irregular shaped 0.77 hrs / m²

Square or Simple 0.62 hrs / m²

Gang: average 3 to 4 man crew

Note: 300 x 600 high

300 mm square steel or aluminium tile

FORMWORK

FABRICATION

Ply on timber framing, nailed	1.0 man hr / m ²
Ditto, screwed	1.2 man hr / m ²
Radiused forms	3.5 man hr / m ²
Column up to 1350mm wide by 450mm deep, 2700mm high, repetitive and semi-repetitive	3-4 columns per day per gang
Wall formwork, straight repetitive	1.16 mhrs/m ²

Gang:

2 carpenters or multiples

FORMWORK TO GROUND WORKS

	FIX	STRIP
	(man hr / m ²)	
Underpinning formwork	1.9	0.6
Rough footings formwork	0.4	0.1
Pilecaps, pads, pits, bases	1.15	0.45
Ground beams	1.3	0.5
Large machine bases	1.5	0.5
Small machine bases	2.25	0.75
	(man hrs / lin. m)	
Road forms		
- up to 150mm high	0.11	0.04
- 150mm - 225 mm high	0.15	0.05
- 225mm - 300 mm high	0.25	0.10
Edge forms to ground slabs		
- up to 150mm high	0.23	0.07
- 150mm - 225 mm high	0.35	0.10
- 225mm - 300 mm high	0.45	0.15
- over 300mm	1.5	0.50
Tamping screeds, wired in place	0.11	
Joggled construction joint, two layers reinf.	0.10	0.60

**BEAM FORMWORK - STRIP, HANDLE, REALIGN
& THROUGH TIE**

Downstand beams up to 600 x 450 repetitive	2.6 mhrs / lin. m
Downstand beams up to 1200 x 600 repetitive	4.00 mhrs / lin. m

Gang:

2 Carpenters, 2 Scaffolders labourers or
multiples

Upstand beams up to 300 x 450, repetitive	2.00 mhrs / lin. m
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Gang:

1 Carpenter, 1 Labourer or Multiples

Pre-fabricated, crane or hydraulically lifted perimeter beam form ("wallform unit")	1.5 mhrs / lin. m
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Pre-fabricated, crane, forklift or hoist handled beam formwork units complete with support system, similar to table form	1.5 mhrs / lin. m
Large or non typical beams	3 - 3.5 mhrs / m ²
Stop-ends to beams	2.85 mhr each + 0.95 mhr / m ²

SLAB FORMWORK

Standard flat plate system	0.11 mhrs/m ²
<i>Gang:</i>	
1 leading hand (rigger) & 5 labourers	
Standard flat plate system, repetitive, strip reprops 28 days slab and handle to reprop floor	0.023mhrs / m ²
<i>Gang:</i>	
1 leading hand, 2 scaffolders, 2 labourers	
Standard flat plate system, handle, erect, infill props and bearers	0.01 mhr / m ² (bearers only)
<i>Gang:</i>	
1 leading hand, 2 scaffolders, 2 labourers	
Flat Plate, repetitive, trim slab horizontal surfaces to vertical surfaces	0.2 mhr / m ²
<i>Gang:</i>	
1 leading hand plus 2 carpenters	
Flat plate, repetitive, handle & erect primary props and bearers, hoist for handling floor to floor	0.2 mhr / m ²
<i>Gang:</i>	
1 leading hand, 2 scaffolders, 2 labourers	
Bondek include. props but excluding supporting members	0.33 mhr / m ²
Erect precast floor panels e.g. Transfloor	0.35 mhr / m ²

COLUMN FORMWORK

600mm to 1350mm by 450mm deep, nominal 2700mm high repetitive, strip, handle, re-erect and plumb	2 columns per day per gang; 3 per day with good gang in repetitive situation
<i>Gang:</i>	
1 carpenter, 1 labour or multiples	
600mm wide by 450mm deep, nominal 2700mm high repetitive, strip, handle, re-erect and plumb	3 columns per day per gang; per day with good gang in repetitive situation
<i>Gang:</i>	
1 carpenter, 1 labour or multiples	

(Does not allow for cast-in hardware fixing)

600mm to 750mm square, semi-repetitive, strip,
handle, re-erect and plumb

1.5 columns per day
per gang;

Gang:

1 carpenter, 1 labour or multiples

(Does not allow for cast-in hardware fixing)

Up to 600mm square, semi-repetitive, strip, handle,
re-erect and plumb

2 columns per day
per gang;

Gang:

1 carpenter, 1 labour or multiples

(Does not allow for cast-in hardware fixing)

WALL FORMWORK

Nominal 2700mm high, repetitive, strip, handle and
re-erect

1.08 mhr / m²

Gang:

2 carpenters, 1 labour

(Does not allow for location pf cast-in
hardware)

Up to 450mm x 1800mm wide, nominal 2700mm
high, repetitive, strip, handle and re-erect

1.3 mhr / m² or 1
wall per day

Gang:

2 carpenters, 1 labour

(Does not allow for location pf cast-in
hardware; or long handling hauls)

Longer than 1800mm wide, nominal 2700mm high,
repetitive and non repetitive, strip, handle and re-
erect

1.9 mhr / m²

Gang:

2 carpenters, 1 labour

(Add 50% for non repetitive work)

Straight, uncomplicated, non repetitive, handle, erect
& strip; acrew wall form, tubular wales and tubular
shores

1.7 mhr / m²

Gang:

Min. 2 carpenters, 2 labour

(For small walls or frequent changes in
direction add 60%; for small areas add
80%)

STAIRS FORMWORK

4.5 mhrs / m²

STRIPPING FORMWORK

Around 25% - 33 %
of tot. time

GLAZING

CLEAN GLASS

Polish	0.47hrs / m ²
Wash Only	0.10 hrs / m ²

ENTRANCE / SHOPFRONTS

Glazing channel and plate glass	3.02 hrs / m ²
Plate (Excluding Channels) - 6.5 mm	2.02 hrs / m ²

MIRRORS - AVERAGE ONLY

1.53 hrs / m²

PANES

Metal Windows	
- 1 x 1 m approx	0.90 hrs / m ²
Timber Windows	
- regular 1 x 1 m approx	0.90 hrs / m ²

HYDRAULICS

DRAINAGE

AGG drainage line	
- 100 mm hession / blue metal	0.07 hrs / m
Concrete	
- 450 mm mortar joints	1.80 hrs / m
- 600 mm mortar joints	2.15 hrs / m
- 900 mm mortar joints	2.80 hrs / m
Concrete pits / Gullies	
- precast (place only)	2.5 hrs each
Earthenware - Bends / Junctions	
- 100 mm rubber joints	0.25 hrs each
- 150 mm rubber joints	0.25 hrs each
- 225 mm rubber joints	0.50 hrs each
Earthenware - Sewer	
- 100 mm rubber joints	0.65 hrs / m
- 150 mm rubber joints	0.85 hrs / m
- 225 mm rubber joints	1.10 hrs / m
Earthenware - Stormwater	
- 100 mm rubber joints	0.33 hrs / m
- 150 mm rubber joints	0.40 hrs / m

- 225 mm rubber joints	0.53 hrs / m
PVC - Bends / Junctions	
- 90 mm / 100 mm	0.25 hrs each
- 150 mm / 160 mm	0.30 hrs each
PVC - Sewer	
- 100 mm	0.55 hrs / m
- 150 mm	0.65 hrs / m
PVC - Stormwater	
- 9 mm	0.20rs / m
- 150 mm	0.40rs / m
Lay & Joint pipes in straight runs	0.2 - 1 mhrs / m

PLUMBING

Cocks & Valves	
- 15 mm to 20 mm	0.25 hrs each
- 32 mm	0.30 hrs each
- 40 mm	0.40 hrs each
Galvanised Pipe	
- 32 mm straight tube not including fitting	0.66 hrs / m
- 50 mm straight tube not including fittings	0.82 hrs / m
Hot Water Units	
- 160 mains pressure - glass lined	3.00 hrs each
- instantaneous multi-point	1.50 hrs each
Sanitary Fixtures	
- bath - pressed steel	1.50 hrs each
- bidet (excl. heater)	2.75 hrs each
- cistern- wall type	1.00 hrs each
- cleaners' sink	2.00 hrs each
- kitchen sink	0.75 hrs each
Soil & waste stack multi-storey	5 - 10 mhr / fl
W.C. Suite	2 - 4 mhrs
3 stall stainless steel urinal	4 - 8 mhrs
Copper service pipes om stack	2 - 4 mhrs each / fl.
Branches in copper pipe	1 - 2 mhrs / m
Stainless steel sink & drainage fixed on cupboard	1 - 2 mhrs
Lavatory basin, bath	2- 4 mhrs each

GRANOLITHIC TOPPING

COVING

50 - 100 mm Radius

- 15 - 20 mm thick 0.3 hrs / m

DIVISION STRIP

Brass - angle or flat (Fix only) 0.10 hrs / m

FLOOR

Edging and Jointings
- trowelled into surface 0.10 hrs / m

Include Prep of slab, mixing and application

- 10 mm 0.25 hrs / m²

- 20 - 25 mm 0.30 hrs / m²

- 50 mm 0.40 hrs / m²

METWELL FRAME

Brass Angle
- 1000 x 700 mm (fixed only) 0.50 hrs each

STAIR TREADS AND RISERS

Screed to Stairs and Risers 0.25 hrs / m
- include rounded nosing and return

IRRIGATION SYSTEMS

LEAKY PIPE

Pipe Installation 0.07 hrs / m

Note: Includes digging and topsoil (50mm) lay and connections to pipe and recover topsoil

JOINERY

BENCHES / CUPBOARDS

Heavy Weight Units 2 hrs / m
- ie. hospitals / labs

LANDSCAPING

PLANTING

Average for plants from tubes to some 35 L pots 0.06 hrs / plant

Super Advanced - over 6 m 0.25 days / crew

Note: Time indicated exluded hole

preparation

RETAINING WALLS

Tri-scape

7.00 blocks / hr

Note: GR - Pagewood (actual) rate
including bedding and filling with topsoil as
work proceeds

SEEDING AND FERTILISING

TOPSOIL

Spread and Level

- by hand

0.04 hrs / m²

- by machine

0.01 hrs / m²

TURFING

Large Area

- by landscape contractor

250 m² / man / day

- by specialist turf contractor

500 m² / man / day

Small Area

- by landscape contractor

0.25 hrs / m²

LIFTS & ELEVATORS

PASSENGER

1 lift, 6 floors - 2 x 2 m approx

15 weeks

2 quick lifts, 15 floors - 2 x 2 m approx

19 weeks

8 lifts, 34 floors - 2.5 x 2.5 m approx.

22 weeks

Roped Hydraulic Lift - Low Rise

- install LMR and commission

8 weeks

- procurement

12 weeks

Underslung Lift - Low Rise

- install LMR & commission

8 - 12 weeks

Note: Installation and commissioning are
taken from shaft available and permanent
power

(vary from different
lift companies)

MARBLE / GRANITE

MARBLE

Flooring

- large areas 0.43 hrs / crew / m²

Gang: 2 man crew

Stairs

- risers 0.50 hrs / m

- treads 0.57 hrs / m

NEOPARIES

Opalised Glass

- facing - columns 4.20 hrs / crew / m²

- facing - walls 2.75 hrs / crew / m²

Gang: 2 man crew

Note: The rates are for a 7 level office building of concrete column and slab construction (simple design).

METAL WORK

CAST IN

Anchor Slot and Unistrut

- superstructure 0.05 hrs / m

Pipe Sleeve

- through 300 mm diameter superstructure 0.70 hrs each

- through 900 mm diameter superstructure 0.85 hrs each

DUCT FRAME AND COVER

300 mm wide 0.60 hrs / m

450 mm wide 1.00 hrs / m

GRATING

Cast Iron or Galvanised

- 250 x 5 mm 0.45 hrs / m

- 320 x 5 mm 0.55 hrs / m

- 500 x 5 mm 0.65 hrs / m

HANDRAILS - STAIR

38 / 50 mm pipe with balusters or wall fixing

- @ 1.5 mm centre 0.66 hrs / m

LADDER

0.90 hrs / m

TOILET ACCESSORIES

Large - fixed to brick / block walls	1.00 hrs per item
Small - fixed to brick / block walls	0.40 hrs per item

TRENCH COVER

Grating	0.45 hrs / m ²
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PAINT

GRANOSITE

- paint on grano impact stripple	0.20 hrs / m ²
- trowelled on	0.32 hrs / m ²

REMOVE PAINT

- by sandblasting	0.05 hrs / m ²
- by hand	0.40 hrs / m ²

EXTERNAL PAINT

To cement render	
- 1 coat sealer, 2 coats oil paint (3 coats)	0.40 hrs / m ²
- 2 coats water paint	0.20 hrs / m ²
To compressed fibrous cement	
- 1 coat sealer, 2 coats oil paint (3 coats)	0.36 hrs / m ²
- 2 coats water paint	0.15 hrs / m ²
To dressed timber	
- knot, stop, prime 1 coat oil paint (2 coats)	0.30 hrs / m ²
- knot, stop, prime 2 coats oil paint (3 coats)	0.40 hrs / m ²
- knot, stop, prime, undercoat and 2 coats (4 coats)	0.60 hrs / m ²
To dressed timber - on frames & sashes	
- prime, stop, 2 coats oil paint (3 coats)	0.60 hrs / m ²
Note: Measured as flat glass	0.20 hrs / m ²
To dressed timber - narrow width < 300mm	
- knot, stop, prime 2 coats oil paint (3 coats)	0.18 hrs / m ²
To metalwork	
- 1 coat zinc primer, 1 undercoat, 1 enamel (3 coats)	0.33 hrs / m ²
To metalwork (narrow width)	
- 1 coat zinc primer, 1 undercoat, 1 enamel (3 coats)	0.10 hrs / m ²

INTERNAL PAINT

Structural Steel	1.30 hrs / m ²
To cement Render - 2 coats PVC	0.20 hrs / m ²
To dressed timber (for frames and sashes measured as flat glass)	
- 1 coat stain, 2 coats varnish on frames and sashes	0.50 hrs / m ²
- 1 coat stain, 2 coats varnish on frames and sashes	0.30 hrs / m ²
- prime, stop, 2 coats oil paint (3 coats)	0.36 hrs / m ²
- prime, stop, 2 coats oil paint on frame & sashes (3 coats)	0.54 hrs / m ²
- prime, stop, 3 coats oil paint (4 coats)	0.60 hrs / m ²
- prime, stop, 3 coats oil paint on frames & sashes (4 coats)	0.80 hrs / m ²
To plasterboard	
- 1 coat sealer, 2 coats oil paint (3 coats)	0.30 hrs / m ²
- 2 coats PVC	0.15 hrs / m ²
To timber and metal	
- 200 - 300mm	0.05 hrs / m ²
- to 200mm	0.04 hrs / m ²
To soffits and ceilings nominal 2700mm high	0.28 hrs / m ²
To columns or walls (plastic paint)	0.28 hrs / m ²

Note: Max. of 1 man per 5 m² floor area

Final coats should not be applied until the risk of damage is minimal, and undercoats receive sufficient drying time

PARQUETRY

PARQUETRY

In mastic over concrete	0.80 hrs / m ²
Over Timber Subfloor	0.80 hrs / m ²

PAVING

ASPHALT

Machine - preparation for hot mix	150 m ² / crew / hr
Machine - single coat hot mix	
- 12 - 25 mm thick	100 m ² / crew / hr
- 50 mm thick	50 m ² / crew / hr
Gang: 50 - 10 m ² / crew / hrs	

Manual - Single Coat	
- 25 mm thick	0.14 hrs / m ²
- 50 mm thick	0.19 hrs / m ²
Manual - 2 Coat	
- 37 mm thick	0.22 hrs / m ²
- 62 mm thick	0.27 hrs / m ²

BRICK

Basket Weave Pattern	1.50 hrs / m ²
Herringbone Pattern	1.80 hrs / m ²
On Edge - 25 mm thick sand bed include cutting	1.00 hrs / m ²
Plain	0.90 hrs / m ²
Steps	2.20 hrs / m ²

CONCRETE

Paths - 100mm thick	0.30 hrs / m ²
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CONCRETE BLOCK

0.20 hrs / m²

Note: Over large open area 30000 / 80000 m² with
12 - 15 men; For small areas as per brick paving

CRAZY PAVING - INCLUDE POINTING AND CUTTING

1.50 hrs / m²

PEBBLECRETE FINISHES - 15 - 30 mm

0.40 hrs / m²

PILING

BEAMS - STEEL

H or I Section	
- driving	0.23 hrs / m
- trim top after driving	1.10 hrs each

HOLLOW STEEL CASSION

Make Up and Drive	0.16 hrs / m
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Note: Does not allow for re-inforcing and
concrete fill if required

POLE - WOOD

Drive Battened or Angled	0.20 hrs / m
Drive Straight	0.16 hrs / m

PLASTER & RENDER

PLASTER

Beams	
- 2 coats - 16 mm	0.50 hrs / m ²
Column	
- 2 coats - 16 mm	0.55 hrs / m ²
Soffits	
- 2 coats - 16 mm	0.50 hrs / m ²
- 3 mm thick skim coat and polish off	0.30 hrs / m ²
Walls	
- 2 coats - 16 mm	0.40 hrs / m ²
- skim coat	0.21 hrs / m ²
<i>Gang:</i> 1 labourer can support 2 renders / plasters	

RENDER

Beams	
- 1 coats - 13 mm	0.45 hrs / m ²
Column	
- 1 coats - 13 mm	0.45 hrs / m ²
Narrow Widths	
- 12 mm on reveals etc. trowelled or wood float, 1 coat	0.62 hrs / m ²
Soffits	
- 1 coats - 13 mm	0.30 hrs / m ²
Internal Walls	
- 1 coats - 13 mm	0.30 hrs / m ²
- 1 coats - 13 mm for wall tile	0.25 hrs / m ²
- 2 coats - 19 mm	0.52 hrs / m ²
External Walls	
- 1 coats - 13 mm	0.30 hrs / m ²
- 2 coats - 19 mm	0.52 hrs / m ²

PRECAST ERECTION

PLACE PRECAST FLOOR UNITS E.G. TRANSFLOOR PANELS

- Crane & Crew : up to 7000 long	12.5 sq.m. per hr
over 10000 long	20.0 sq.m. per hr

ERECT TILT-UP WALL PANELS

1 panel / hr

ERECT SPANDREL PANELS

6 - 8 panels / day

(Allow additional time for align & fixing)

REINFORCEMENT

BEAM STEEL

3.35 m / hrs / 0.75m³

Repetitive, simple steel, prefabricate stools, stirrups less than 300 mm centres, handle, assemble and tie beam stool

Gang: 2 steeliers

Rate based on steel being bundled and tagged as a beam; presorted and stacked at a hoisting point.

With 70% of beam able to be prefabbed before fixing in beam form. For unrepetitive beams add 100%.

FOOTING AND FOUNDATION STEEL

Large Bars well spaced; unrepetitive but basically simple; handle, assemble and tie steel

12 mhrs / tonne

Gang: 2 steeliers or multiples of 2

Rate based on steel being bundled and tagged in 51kg bundles. All sorted and stacked ready for fixing

FOOTING STEEL

Unrepetitive dense steel with fair complication, handle, assemble and tie steel from drawings

24 mhrs / tonne

Gang: 2 steeliers or multiples of 2

Rate based on steel being bundled and tagged in 51kg bundles. All sorted and stacked ready for fixing

WALL STEEL

Simple repetitive wall steel, assemble and tie wall steel; handle and tie vertical bars, assemble horizontal bars and tie alternate intersections

0.36 mhrs / m²

Gang: 2 steeliers or multiples of 2

Rate based on steel being bundled and tagged in 51kg bundles. All sorted and stacked ready for fixing

COLUMN STEEL

Simple repetitive column steel; nominal 2700mm column, simple stirrups no closer than 300mm centers; assemble and tie wall steel; handle and tie main bars to splice bars, spread and place stirrups and tie.

Gang: 2 steeliers or multiples of 2

Rate based on column steel bundled and tagged as a column complete. Sorted and stacked at a hoisting point. For unrepetitive columns add 50%.

15 mhrs / tonne

SLAB STEEL (BOTTOM)

Repetitive 2 way slab, nominal 225mm thick, nominal 12mm bar; handle, setout and tie slab steel; 2 steelies handling and laying out; 2 steelies tying every fourth intersection

Gang: nominal 4 steelies or additional multiples of 2

Rate based on repetitive steel pattern. No more than 2 size length bars or pattern. Bars pre-tied, tagged and stacked in cwt bundles ready for hoisting. Add 80% for unrepetitive work and "first lay" of repetitive steel and 25% for second repetitive lay.

Handwritten:
1 man = 20 m² / day
540 m² 27 man
0.05 mhrs / m² x 8 hrs
160 m² 0.4 man days / m²
13 S.O

SLAB STEEL (TOP)

Repetitive 2 way slab, nominal 225mm thick; handle, setout and tie top steel;

2 steelies handling and laying out; 2 steelies tying every intersection

Gang: nominal 4 steelies or additional multiples of 2

0.008 mhrs / m²

ROOFER

METAL DECK ROOFING

0.20 mhr / m²

CORRUGATED A.C. INCLUDING SAFETY MESH

0.16 mhr / m²

TRANSLUCENT SHEETING (ROOF LIGHTS)

0.36 mhr / m²

WALL CLADDING

0.28 mhr / m²

OVERALL RATE FOR METAL DECK ROOFING

200 m² / gang / day

DOWNPIPES

Compressed fibrous cement	0.40 hrs / m
Gal. Steel - pipes 75mm to 100mm	0.30 hrs / m
PVC	0.25 hrs / m

FLASHINGS

Lead	
- stepped	0.54 hrs / m ²
- Straight	0.30 hrs / m ²

GUTTER

Box Steel (average size)	0.5 hrs / m
Eaves	
- compressed fibrous cement	0.35 hrs / m
- metal	0.33 hrs / m
Eaves (Combined gutter / bird flashing)	
- compressed fibrous cement	0.40 hrs / m
Valley	
- metal	0.33 hrs / m

SAFETY MESH WIRE

- 300 x 300 mm fixed to timber (before c.f.c. sheet)	0.03 hrs / m ²
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SHEET

Compressed fibrous cement	
- corrugated	0.20 hrs / m ²
Metal - Gal. corrugated	
- fixed to steel purlins	0.25 hrs / m ²
- fixed to timber purlins	0.22 hrs / m ²
Metal ribbed interlock	
- fixed to steel purlins - clipped	0.25 hrs / m ²
- fixed to timber purlins - clipped	0.20 hrs / m ²

SHEET FLASHING

Metal - cover or apron flashing 200mm to 500 mm	0.45 hrs / m
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SINGLES

Compressed fibrous cement	0.30 hrs / m ²
Wood	0.37 hrs / m ²

ROOF TILES

CONCRETE / CLAY ON BATTENS 0.25 hrs / m²

RIDGES - CARRY, BED AND POINT, HIP OR
GABLE END 0.5 hr / m

SANDWICH WALL PANEL ERECTION

ERECT PANELS 7M X 1.2M 12 panels /gang / day

ERECT CEILING PANELS 10 panels /gang / day

COVER CONCRETE KERBING 10 lin.m. /gang / day

SCAFFOLDING

KWIKSTAGE TYPE:

- erect one lift including guard rail 0.22 mhrs / lin. m
- dismantle ditto 0.44 mhrs / lin. m

BOARD

Board out 5 boards wide + toe board 0.06 mhrs / lin. m
Remove boards 0.04 mhrs / lin. m

TUBE & LITTING TYPE:

- erect independent scaffold, include. board out per
sq. m. measured on wall face 0.27 mhrs / m²
- dismantle ditto 0.14 mhrs / m²

BIRDCAGE SCAFFOLD

Erect birdcage scaffold, standards @ 2700 centres,
1800 high lifts 0.045 mhrs / m³
Dismantle birdcage scaffold 0.022 mhrs / m³

BOARD OUT TO AREA 0.045 mhrs / m³

PATENT ERECT FOR 1 - 2 SECTIONS HIGH 1.40 hrs / section

SHORING

PLANK AND STRUTT

Basements

- 0 - 3 m deep - place	0.64 hrs / m ²
- 0 - 3 m deep - remove	0.40 hrs / m ²
- 0 - 9 m deep - place	0.88 hrs / m ²
- 0 - 9 m deep - remove	0.56 hrs / m ²
- 0 - 15 m deep - place	1.24 hrs / m ²
- 0 - 15 m deep - remove	0.86 hrs / m ²

Shafts

- 0 - 3 m deep - place	0.26 hrs / m ²
- 0 - 3 m deep - remove	0.16 hrs / m ²
- 0 - 9 m deep - place	0.38 hrs / m ²
- 0 - 9 m deep - remove	0.25 hrs / m ²
- 0 - 15 m deep - place	0.51 hrs / m ²
- 0 - 15 m deep - remove	0.33 hrs / m ²

Trenches

- 0 - 1 m deep - place	0.30 hrs / m ²
- 0 - 1 m deep - remove	0.20 hrs / m ²
- 0 - 3 m deep - place	0.35 hrs / m ²
- 0 - 3 m deep - remove	0.23 hrs / m ²
- 0 - 6 m deep - place	0.51 hrs / m ²
- 0 - 6 m deep - remove	0.34 hrs / m ²

Gang: Rates are for 2 man crew - carpenter & labourer

Note: Rate given are for average ground; For firm ground use rate x 0.25; For loose ground use rate x 0.20

SPRINKLERS

MULTI-STOREY BUILDING

Rough - in	0.10 mhr / m ²
Install sprinklers complete and test in false ceiling, set out to co-ordinate with ceiling grid	3 mhrs/sprinkler head
Ditto with false ceiling, open area with easy fixing	2 mhrs/sprinkler head

Note: Based on light hazard density of 1 point per 12 m² and fixing to highly accurate grid for false ceiling

Rate = 3 mhrs / sprinkler head = 0.25 mhrs/m²

Gang: 2 men or multiples

STRUCTURAL STEEL

MULTI-STOREY ERECTION

Erect 3 - storey columns	0.5 hr each
Erect primary beams	0.33 hr each +bolt up
Erect secondary & smaller beams	0.17-0.25hr each + bolt up
Lay bondek & screw down	0.1 mhr / m ²
Shear studs, resistance welded	120 per mhr

STRUCTURAL STEEL ERECTION

Columns	1 hr each
Portal frames, joined on ground, lifted & bolted	1 - 2 hrs each
Braces and ties	0.25 hr each
Purline	100 lin. m. / man / day

NON-WELDING ERECTION

Columns (factory type)	3 per day
Floor beams	2 per day
Bracing members, ridge ties etc.	4 per day
Roof trusses 12m to 15m	10 per day
Roof trusses up to 30m	6 per day
<i>Gang:</i> One crane plus a rigging crew to offload and erect.	

Note: Assuming the work is accessible and there are no penetration welded connections on site

0000 - 0020 TONNE

Erect, plumb and temporarily bolt	4.43 hrs / tonne
Fastening	
- bolting by hand	5.90 hrs / tonne
- rivet	6.15 hrs / tonne
- welding	5.90 hrs / tonne

0020 - 100 TONNE

Erect, plumb and temporarily bolt	3.93 hrs / tonne
Fastening	
- bolting by hand	3.93 hrs / tonne
- rivet	5.90 hrs / tonne
- welding	4.43 hrs / tonne

100 - 500 TONNE

Erect, plumb and temporarily bolt	3.84 hrs / tonne
Fastening	
- bolting by hand	3.44 hrs / tonne
- rivet	5.19 hrs / tonne
- welding	3.93 hrs / tonne

500 - 1000 TONNE

Erect, plumb and temporarily bolt	3.35 hrs / tonne
Fastening	
- bolting by hand	2.46 hrs / tonne
- rivet	4.92 hrs / tonne
- welding	3.44 hrs / tonne

1000 - 5000 TONNE

Erect, plumb and temporarily bolt	2.95 hrs / tonne
Fastening	
- bolting by hand	1.47 hrs / tonne
- rivet	4.33 hrs / tonne
- welding	2.46 hrs / tonne

5000 TONNE +

Erect, plumb and temporarily bolt	2.56 hrs / tonne
Fastening	
- bolting by hand	0.98 hrs / tonne
- rivet	3.94 hrs / tonne
- welding	1.97 hrs / tonne

DOCK AND CANOPY FRAMING

Erect, plumb and temporarily bolt	4.43 hrs / tonne
Fastening	
- bolting by hand	1.48 hrs / tonne
- rivet	8.12 hrs / tonne
- welding	2.07 hrs / tonne

FLOORS AND PLATFORMS

Catwalk framing - erect and fasten	29.52 hrs / tonne
Checkered floor plate - erect and fasten	2 hrs / tonne
Platform framing - erect and fasten	30.51 hrs / tonne

FRAMING & BRACING

Heavy section (UB, UC, RSJ and RSC)

- fabrication 23 hrs / tonne

FRAMING & BRACING

Light section (Angles etc)

- fabrication 30 hrs / tonne

HOLLOW SECTIONS

Large sections

- fabrication 30.00 hrs / tonne

Small sections

- fabrication 35.00 hrs / tonne

OVERHEAD PIPE, BRIDGES

Erect, plumb and temporarily bolt

5.90 hrs / tonne

Fastening

- bolting by hand 1.97 hrs / tonne

- rivet 2.95 hrs / tonne

- welding 2.46 hrs / tonne

PURLINS & GIRTS INCLUDE LAPS, BRACING ETC.

- over 150mm high 0.12 hrs / m

- up to 150mm high 0.08 hrs / m

SURFACE TREATMENT - SAND BLAST AND PAINT

- heavy section 5 hrs / tonne

- Light section 8 hrs / tonne

TRUSSES & CONNECTIONS

Over 10m Span

- erection 8 hrs / tonne

- fabrication 35 hrs / tonne

Up to 10m Span

- erection 5 hrs / tonne

- fabrication 50 hrs / tonne

TERRAZZO

FLOOR

Insitu Coving - include grind and polish	2.00 hrs / m
Insitu Floor - include grind and polish	3.00 hrs / m ²
Tiles - lay / grout/ grind / polish	0.33 hrs / m ²
<i>Note: For small area referring to ceramic tiling rates</i>	

STAIR TREADS AND RISERS

Insitu	4.00 hrs / m ²
Precast	3.60 hrs / m ²

TILES

CERAMIC

Coping	0.15 hr / m
Fitting	
- general	0.33 hrs each
- recess	0.75 hrs each
Floor	
- 25 x 25 mm on screed bed include clean and grout	1.67 hrs / m ²
- 25 x 25 mm with border (excl cement fill)	1.67 hrs / m ²
- 50 mm hexagonal	1.50 hrs / m ²
- 75 x 75 mm	1.80 hrs / m ²
- 75 mm hexagonal	1.80 hrs / m ²
- 100 x 100 mm on screed bed include clean & grout	1.50 hrs / m ²
- 150 x 150 mm on screed bed include clean & grout	1.25 hrs / m ²
- 200 x 200 mm on screed bed include clean & grout	1.10 hrs / m ²
Skirting Tile	
- fixed with adhesive	0.60 hrs / m ²
Stairs and Landings	
- 150 x 150 mm (measured on plan)	1.11 hrs / m ²
Trims	
- angle beads and cappings	0.26 hrs / m ²
- round edge fixed to sills and reveals	0.82 hrs / m ²
Wall Tile	

- 100 x 100 fixed with mortar	2.50 hrs / m ²
- 150 x 150 mm fixed with adhesive	1.50 hrs / m ²
- 200 x 200 mm fixed with adhesive	1.50 hrs / m ²

QUARRY

Floor	
- 75 x 75 mm	1.85 hrs / m ²
- 100 x 100 mm	1.50 hrs / m ²
- 150 x 150 mm	1.45 hrs / m ²
- 225 x 225 mm	1.26 hrs / m ²
Skirting Tile	1.00 hrs / m

VINYL / RUBBER FLOORING

ASPHALT FLOOR TILE

150 x 150 mm	0.21 hrs / m ²
300 x 300 mm	0.12 hrs / m ²
Cove	0.05 hrs / m

MASONITE UNDERLAY

Floor	0.12 hrs / m ²
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RUBBER TILE

150 x 150 mm	0.33 hrs / m ²
300 x 300 mm	0.12 hrs / m ²
Cove	0.05 hrs / m

VINYL SHEET

Floor	
- antistatic	0.16 hrs / m ²
- normal	0.14 hrs / m ²

VINYL SKIRTING

Skirting	
- 75 - 100 mm	0.08 hrs / m

VINYL TILES

Cove	
- 150 mm	0.10 hrs / m ²
Floor	
- 300 x 300 mm	0.21 hrs / m ²

Stair Treads	1.31 hrs / m ²
Wall	
-300 x 300 mm	0.22 hrs / m ²

WALL - INTERNAL DRY

PROPRIETRY PARTITION SYSTEM

1.2 - 2.1 m High per Finishes	
- include doors etc. exclude glass & ducted skirting	0.77 hrs / m ²

SHEET - NOT INCLUDE FOR STUDS

Compressed Fibrous Cement	0.30 hrs / m ²
Hardboard	
- 3.2 mm	0.28 hrs / m ²
Plasterboard	
- 10 mm - include tape / set	0.25 hrs / m ²
- fixed to brick / block walls by plaster dabs	0.30 hrs / m ²
Plywood	
- 6 mm	0.33 hrs / m ²

STUD FRAME

Stud - Metal	
- include top / bottom plate	0.22 hrs / m ²
Stud - Timber Include Top / Bottom Plate	
- 100 x 50 mm	0.40 hrs / m ²
- 75 x 50 mm	0.36 hrs / m ²

VENEERED PARTICLE BOARD

Sheet	
- 16 mm thick - fixed to timber frame	0.50 hrs / m ²

VERMICULITE SPRAY

2 Coats	
- approx 9 mm	1.20 hrs / m ²

WATER / DAMP PROOFING

FOUNDATION / BASEMENT WALLS

Damp Resisting Paint	0.10 hrs / m ²
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Mastic Type Coating - 3 mm	0.53 hrs / m ²
Silicone or Metallic Coating	0.21 hrs / m ²

WINDOW / WINDOW FRAMES

METAL - ALUMINIUM

Prefabricated

- casement sash	1.35 hrs / m ²
- fixed	1.06 hrs / m ²
- fixed sash	1.06 hrs / m ²
- sliding	1.25 hrs / m ²

SKYLIGHTS

Prefabricated

1.65 hrs / m²

TIMBER

Prefabricated

- awning / double hang	1.25 hrs / m ²
- fixed	1.06 hrs / m ²