

Whole Life Costs of Safer Playground Surfacing

- We have used an independent, well respected and experienced playground installation contractor, to help calculate the following real-life costs, based on his experience over many years.
- It is not our intention to prove that one surface type is better or cheaper than another. However, for many years, it has been said that because of the high maintenance cost of loose fill surfaces, their 'whole life cost' was far higher than say, wet pour rubber. These costings present a different picture.

Surface Type	Capital Cost	Maintenance Costs over 5 years	Disposal Landfill Cost	Total Whole Life Costs
Loose Impact Surfaces (L.I.A.S.)				
Playchips® – woodchips	£8,318	£15,800	See below	£24,118
Playbark® 10/50 – bark chips	£9,066	£16,600	See below	£25,666
Grass Matrix	£25,000	-	£4,000	£29,000
Wet Pour Rubber (black)	£33,946	£1,000	£4,000	£38,946
Tiles (black)	£38,214	£3,000	£4,000	£45,214

Please note the following important points:-

1. The area to be surfaced was 20 x 18 metres i.e. 360 square metres, using products to give a minimum 2.40 metre critical fall height.
Costs based on those at 1 June 2008, with all products and installation being in accordance with all relevant British & European Standards.
2. The L.I.A.S. installation depth is in accordance with BS EN1176: 2008:
Melcourt Playbark® 10/50 - installation depth 200mm +10% for settlement
Melcourt Playchips® - installation depth 250mm + 10% for settlement
3. Melcourt Playchips® are produced from graded UK conifer / hardwood chips and are Forest Stewardship Council (FSC) certified.
They are not made from recycled post consumer wood waste, i.e. shredded pallets etc.
4. Many playgrounds, particularly in rural areas, are maintained by unpaid volunteers.
In these cases, the 'full life' costs of Loose Impact Surfaces, could be reduced by a further £13,800.
5. The Grass Matrix option includes a Maintenance Contract in the capital cost.
Other suppliers of this type of product might charge extra for subsequent maintenance.

Conclusions

1. Melcourt Playchips® represent the lowest cost option over 5 year period.
2. If the Wet Pour Rubber or Tiles had been coloured, not black, this would have increased the capital costs by between 25 and 50%, for these surface types.
3. Bark and woodchips can be successfully used as a mulch or soil conditioner at the end of their service life and would therefore not incur the 'disposal costs'.
4. Bark and wood chip products are more environmentally sustainable than any of the other surface types.
5. There is a rightful place for each surface type. In carrying out this exercise, we have tried to highlight real capital, maintenance and disposal costs of a full life period.

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Whole Life Costs of Safer Playground Surfacing - Detailed Costings

Item & Description	Quantity	Unit Price	Subtotal	Total
Loose Impact Surface (L.I.A.S.)				
Capital Cost				
Site Security				
play area 18m x 20m	lump sum		£250.00	
Base Works, Edgings & Surfacing				
excavate 360m ² - machinery	lump sum	£480.00	£480.00	
excavate 360m ² - labour	6 man/days	£230.00	£1,380.00	
disposal of spoils @300cm deep	9 grab loads	£200.00	£1,800.00	
edge boards	76 linial metres	£8.00	£608.00	
geotextile	360 square metres	£1.50	£540.00	
Supply of L.I.A.S. Melcourt Playchips [®] (250mm) or	2 x 50 cubic metres	£26.00	£2,600.00	
Supply of L.I.A.S. Melcourt Playbark [®] 10/50 (200mm) spread L.I.A.S. - machinery & labour	1 x 80 cubic metres lump sum	£41.85 £660.00	£3,348.00 £660.00	
Using Melcourt Playchips [®] or				£8,318.00
Using Melcourt Playbark [®] 10/50				£9,066.00
Maintenance Costs over 5 years				
labour per year	12 man days	£230.00	£2,760.00	
top up per year - Melcourt Playchips [®] 10% of 100m ³	10 cubic metres	£40.00	£400.00	£15,800.00
top up per year - Melcourt Playbark [®] 10/50 10% of 80m ³	8 cubic metres	£70.00	£560.00	£16,600.00
Disposal / Landfill Cost				
	lump sum	£0.00	£0.00	£0.00
Grass Matrix				
Capital Cost				
Site Security				
play area 18m x 20m	lump sum		£250.00	
Base Works, Edgings & Surfacing				
Matta	360 square metres	£68.75	£24,750.00	£25,000.00
Maintenance costs over 5 years				
maintenance included in suppliers contract	lump sum	£0.00	£0.00	£0.00
Disposal / Landfill Cost				
	lump sum	-	£4,000.00	£4,000.00

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Whole Life Costs of Safer Playground Surfacing - Detailed Costings (Continued)

Item & Description	Quantity	Unit Price	Subtotal	Total
Wet Pour Rubber				
Capital Cost				
Site Security play area 18m x 20m	lump sum		£250.00	
Base Works, Edgings & Surfacing base works	360 square metres	£25.00	£9,000.00	
wet pour rubber - black	360 square metres	£64.80	£23,328.00	
extra for concrete edge kerbs (optional)	76 per item	£18.00	£1,368.00	
				£33,946.00
Maintenance Costs over 5 years				
no special annual maintenance	lump sum	£0.00	£0.00	
allowance for repairs/sectional renewals over 5 years	lump sum	£1,000.00	£1,000.00	£1,000.00
Disposal / Landfill Cost	lump sum	-	£4,000.00	£4,000.00
Tiles				
Capital Cost				
Site Security play area 18m x 20m	lump sum		£250.00	
Base Works, Edgings & Surfacing base works	360 square metres	£65.00	£23,400.00	
tiles	360 square metres	£32.05	£11,538.00	
adhesive	240 tubs	£4.95	£1,188.00	
extra for concrete edge kerbs (optional)	76 linial metres	£18.00	£1,368.00	
				£37,744.00
Maintenance Costs over 5 years				
no special maintenance	lump sum	£0.00	£0.00	
joint repairs every 2½ years - allowance	lump sum	£3,000.00	£3,000.00	£3,000.00
Disposal / Landfill Cost	lump sum	-	£4,000.00	£4,000.00

The above costs were based on those current at 1 June 2008.

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Whole Life Costs of Safer Playground Surfacing - Detailed Costings (Continued)

An updated European Standard BS EN1176 and 1177 was finalised on 29 May 2008 and is due for publication by 31 October 2008. There are three amendments which will have a significant effect on surface choice:-

1. The installation depth of loose fill surface will be the test depth + 100mm, not 200mm as before, to give the required critical fall height.

Product Name	Test depth to give a minimum 2.40 metres fall height	Installation depth
Playbark® 10/50	100mm = 2.42 metres test result	100 + 100 = 200mm
Playbark® 8/25	200mm = 3.82 metres test result	200 + 100 = 300mm
Playchips®	150mm = 2.50 metres test result	150 + 100 = 250mm
Kushyfall	100mm = 2.59 metres test result	100 + 100 = 200mm
Softfall	200mm = 3.42 metres test result	200 + 100 = 300mm
Playsand	200mm = 3.11 metres test result	200 + 100 = 300mm

Please allow a settlement amount to each of above installation depths. Refer to Melcourt Technical Data

This reduction in the installation depth is effective from when the revised standard is published.

2. Grass matrix type surfaces will be issued with a Test Certificate resulting from laboratory testing only.
3. Under the revised BS EN1176, well-maintained grass is acceptable for fall heights of up to 1.5metres, subject to a satisfactory risk assessment.

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