

# MIT

# Design Standards

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**Child Care Centers**

**T05 Thematic Folder**

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Department  
of Facilities

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# 1. MIT CHILD CARE DESIGN STANDARDS

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## 1.1 Introduction

Before beginning any planning or design for a new or renovated childcare facility on the MIT campus, the project manager should schedule a meeting with the director of child care at MIT’s WorkLife and WellBeing Center to establish the current standards and regulations that should be utilized in the childcare centers at MIT. MIT utilizes a third party to manage and operate the Childcare Centers. At this point in time, the operator is Bright Horizons and they have their own set of standards that must be utilized in design. Childcare Standards and Regulations change frequently so MIT requires that the project team meet with the WorkLife and WellBeing Center before starting the project to ensure compliance with the most current regulations.

## 2. PLAYGROUND MATERIALS

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This document was authored by EHS to standardize requirements for MIT facilities where child care centers are located at MIT owned and/or leased locations. Standards are provided for soils, sand and wood mulch or articles.

### 2.1 Soils

The Massachusetts Department of Environmental Protection has identified what is termed as background levels of substances in soils as surveyed throughout the Commonwealth. These background levels presented in Table 1 or “natural” soil concentrations are set as the standard for contractors to meet when introducing new soils to MIT owned and/or leased Child Care Center Playgrounds.

**Table 1 – MA DEP Identified Background Levels in Soil, Concentration in “Natural Soil”**

#### **Oil or Hazardous Material (mg/kg)**

Acenaphtene	0.5
Acenaphthylene	0.5
Anthracene	1
Aluminum	10,000
Antimony	1
Arsenic	20
Barium	50
Benzo(a)anthracene	2
Benzo(a)pyrene	2
Benzo(b)flouranthene	2

Benzo(g,h,i)perylene	1
Benzo(k)fluoranthene	1
Beryllium	0.4
Cadmium	2
Chromium (Total)	30
Chromium(III)	30
Chromium(IV)	30
Chrysene	2
Cobalt	4
Copper	40
Dibenzo(a,h)anthracene	0.5
Fluoranthene	4
Fluorene	1
Indeno(1,2,3-cd)pyrene	1
Iron	20,000
Lead	100
Magnesium	5,000
Manganese	300
Mercury	0.3
Methylnaphthalene, 2-	0.5
Naphthalene	0.5
Nickel	20
Phenanthrene	3
Pyrene	4
Selenium	0.5
Silver	0.6
Thallium	0.6
Vanadium	30
Zinc	100

### 2.3 Sand

Sand box sand is recommended for any sandbox located within a MIT owned and/or leased Child Care Center Playgrounds. Specified sand shall not contain dye or added colors. Provide washed sandbox sand meeting US Consumer Product Safety Commission and National Association for Education of Young Children recommendations.

### 2.3 Wood

Chromate copper arsenate (CCA)-treated wood products are NOT allowed either in mulch or wood play structures. CCA treated wood products are also referred to as pressure treated wood. Mulch is recommended to be an engineered wood fiber such as a Fibar - this type of mulch is made of virgin wood fiber. Allowable preservative treatments include ACQ preservative or MCA (micronized copper azole).

## 2.4 Related Materials

Products that have been used on recent projects include the following

1. ACQ treated southern yellow pine No. 2 beams, joists and posts for structure of decking.
2. White or red cedar slats for fencing.
3. Composite lumber decking and cap for cubby walls, from reclaimed wood and plastic with integral coloring, free from toxic chemicals and preservatives.
4. Acetylated wood for cubby walls and buggy storage.
5. Poured-in-place rubber safety surfacing, recycled SBR rubber fibers. Surfacing shall not contain hazardous substances such as toluene, lead or mercury compounds or cadmium coloring pigments. Surface shall have sub-base of stone or asphalt to provide drainage.
6. Synthetic turf system, UV-resistant polyethylene and nylon fiber with 6 ply fiber mass, pile height 1-1/8 inch, green color, Luxury REc by XGrass or equal; infilled with coated sand at a depth of 1/4 inch.
7. Sandbox covers fabricated from marine-grade breathable water-penetrable fabric; Custom Sandbox Covers, Belford, NJ.

## 3. PLAYGROUND EQUIPMENT

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### 3.1 Playground Equipment

Comply with the following:

1. Playground Equipment Manufacturer shall be ISO 9001 certified (Quality Management Standard).
2. Playground Equipment Manufacturer shall be ISO 14001 certified (Environmental Management Standard).
3. PVC (vinyl, plastisol) shall not be present on any portion of the play equipment.
4. Hardware shall be vandal resistant.
5. Installation of playground equipment must be performed by a factory certified installer; submit copy to MIT project manager prior to installation.

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