

The Pearl Rating System for
Estidama
 Building Rating System
 Design & Construction
 Version 1.0 (2010)
 Summary ALG, 21022019



Estidama, which means 'sustainability' in Arabic, is the initiative which will transform Abu Dhabi into a model of sustainable urbanization.

Requirement	Pearl Rating Achieved
All mandatory credits	1 pearl
All mandatory credits + 60	2 pearl
All mandatory credits + 85	3 pearl
All mandatory credits + 115	4 pearl
All mandatory credits + 140	5 pearl

Sections	Maximum Credit Points	Credit points to which Jotun products can contribute
Integrated Development Process (IDP): Encouraging cross-disciplinary teamwork to deliver environmental and quality management throughout the life of the project.	13	
Natural Systems (NS): Conserving, preserving and restoring the region's critical natural environments and habitats.	12	
Livable Buildings (LB): Improving the quality and connectivity of outdoor and indoor spaces.	37*	
LBo-R3: Outdoor Thermal Comfort Strategy (mandatory)		2
LBo-1: Improved Outdoor Thermal Comfort		1
LBi-2.2: Material Emissions: Paints & Coatings		1
LBi-2.4: Material Emissions: Ceiling Systems		2
LBi-2.5: Material Emissions: Formaldehyde Reduction		
Precious Water (PW): Reducing water demand and encouraging efficient distribution and alternative water sources.	43*	
Resourceful Energy (RE): Targeting energy conservation through passive design measures, reduced demand, energy efficiency and renewable sources.	44	
RE-2: Cool Building Strategies		1
Stewarding Materials (SM): Ensuring consideration of the 'whole-of-life' cycle when selecting and specifying materials.	28	
SM-1: Non-Polluting Materials		3
Innovating Practice (IP): encouraging innovation in building design and construction to facilitate market and industry transformation.	3	
Total	177*	10

LB : Maximum of 36 credit points available for Offices and 30 credit points for Retail.

PW : Maximum of 45 credit points available for Schools.

Total : Excludes Innovating Practice credit points which are offered as bonus credits.

Points where paint may contribute

LBo-R3: Outdoor Thermal Comfort Strategy

Shade measures (cover or shade) must be provided in all applicable spaces and achieve the following minimum % shading:

Space Type	Minimum % shading
Exterior Surface Parking with more than 10 spaces (including parking on roof surfaces)	40%
Public Open Spaces (including privately owned)	60%
Primary Pedestrian Walkways (based on 1.8m width within the through zone)	75%
Secondary Pedestrian Walkways (based on 1.8m width within the through zone)	75%
Cycle Tracks	50%
Playgrounds	90%

This is a requirement. There are no Credit Points awarded.

LBo-1: Improved Outdoor Thermal Comfort

Demonstrate that the outdoor thermal comfort strategy has been improved beyond the minimum established under credit LBo-R3 Outdoor Thermal Comfort Strategy by increasing the shade measures as follows:

Space Type	1 Credit Point	2 Credit Points
Surface car parking (including parking on roof surfaces)	50 %	55 %
Public Open Space (including privately owned)	65 %	70 %
Primary Pedestrian Walkway (based on 1.8m width within the through zone)	80 %	85 %
Secondary Pedestrian Walkway (based on 1.8m width within the through zone)	80 %	85 %
Cycle tracks	55 %	65 %

Where cover is provided by structures such as canopies or other architectural elements, the outer surface of the shading element must have a minimum Solar Reflectance Index (SRI) of 29. References:

ASTM E1980 - 01 Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces

ASTM E1918-06, Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field

LBi-2.2: Material Emissions: Paints & Coatings

Demonstrate that the interior surface area covered by paints and coatings in the project meet or are less than the maximum VOC content limits values for paints and coatings for 95% of all surface areas covered by paints and coatings per Annex II, Phase II, Table A of European Directive 2004/42/CE: 2004. The VOC limits of the remaining non-compliant paints and coatings must be no more than 50% higher than the values listed above for each product type.

All paints and coatings must have fungal resistance.

Schools: 100% of all surface areas covered by paints and coatings must have VOC limits no more than the limits prescribed per Annex II, Phase II, Table A of European Directive 2004/42/CE: 2004.

CREDIT POINTS	REQUIREMENTS
1 (maximum)	Design Rating
1	95% of all adhesives & sealants meet criteria; or Schools : 100% of all adhesives & sealants meet criteria
1 (maximum)	Construction Rating
1	95% of all adhesives & sealants meet criteria; or Schools : 100% of all adhesives & sealants meet criteria

Enter all compliant and non-compliant paints and coatings into the LBi-2.2 Paints and Coatings template, their VOC content, the allowable VOC content and the total quantity used; and Material Safety Data Sheets (MSDS) and Technical Data Sheets for all interior paints and coatings.

Reference: Annex II, Table A of Directive 2004/42/CE of the European Parliament and of The Council of 21 April 2004, <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:143:0087:0096:EN:PDF>

LBi-2.4: Material Emissions: Ceiling Systems

CREDIT POINTS	REQUIREMENTS
1 (maximum)	Design Rating
1	All ceiling systems meet credit criteria
1 (maximum)	Construction Rating
1	All ceiling systems meet credit criteria

Non-Suspended Ceiling Systems

Comply with the requirements listed in LBi-2.2 for any Paints and Coatings.

LBi-2.5: Material Emissions: Formaldehyde Reduction

1 Credit Point; Demonstrate that all internal construction materials do not exceed formaldehyde VOC content class E1 levels (Release ≤ 0.124 mg/m³ air).

1 Credit Point: In addition to achieving the requirement above, demonstrate that all installed furniture does not exceed formaldehyde VOC content class E1 levels (Release ≤ 0.124 mg/m³ air).

Requirements: Interior finish and furniture schedule highlighting products likely to contain formaldehyde. For all products containing formaldehyde, provide either Manufacturer's Data Sheets or Third party evidence showing certification of formaldehyde content tested, according to appropriate testing standards (see reference standards). All products must be tested according to the reference standards or demonstrated equivalent testing standards. EN 717-1 for initial type testing, www.bsigroup.com EN120 and EN 717-2 for factory production control, www.bsigroup.com

RE-2: Cool Building Strategies

An additional point is awarded for the use of high solar reflective roofing materials in order to help reduce the building external heat gain as well as the impact on the local microclimate.

1 Credit Point: Use of roofing materials with a Solar Reflectance Index (SRI) ≥ 78 .

Reference: ASTM E1980 - 01 Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces

SM-1: Non-Polluting Materials

Low Toxicity Materials

1 Credit Point: Eliminate materials or building products or components containing elements or compounds with the following R-phrases attribution under EU Risk Phrases (R-Phrases) listed in Annex III of EU Directives 67/548/EEC:

- R20 - Harmful by inhalation.
- R21 - Harmful in contact with skin.
- R22 - Harmful if swallowed.
- R23 - Toxic by inhalation.

- R24 - Toxic in contact with skin.
- R25 - Toxic if swallowed.
- R26 - Very toxic by inhalation.
- R27 - Very toxic in contact with skin.
- R28 - Very toxic if swallowed.
- R29 - Contact with water liberates toxic gas.
- R31 - Contact with acids liberates toxic gas.
- R32 - Contact with acids liberates very toxic gas.
- R33 - Danger of cumulative effects.
- R36 - Irritating to eyes.
- R37 - Irritating to respiratory system.
- R38 - Irritating to skin.
- R39 - Danger of very serious irreversible effects.
- R41 - Risk of serious damage to eyes.
- R42 - May cause sensitization by inhalation.
- R43 - May cause sensitization by skin contact.
- R45 - May cause cancer.
- R46 - May cause heritable genetic damage.
- R48 - Danger of serious damage to health by prolonged exposure.
- R49 - May cause cancer by inhalation.
- R50 - Very toxic to aquatic organisms.
- R51 - Toxic to aquatic organisms.
- R52 - Harmful to aquatic organisms.
- R53 - May cause long-term adverse effects in the aquatic environment.
- R54 - Toxic to flora.
- R55 - Toxic to fauna.
- R56 - Toxic to soil organisms.
- R57 - Toxic to bees.
- R58 - May cause long-term adverse effects in the environment.
- R59 - Dangerous for the ozone layer.
- R60 - May impair fertility.
- R61 - May cause harm to the unborn child.
- R62 - Possible risk of impaired fertility.
- R63 - Possible risk of harm to the unborn child.
- R64 - May cause harm to breastfed babies.
- R65 - Harmful: may cause lung damage if swallowed.

In order to qualify for this credit, all building materials must not contain materials or compounds with over 1% of constituent materials with designated R-phrases in the above categories (minor exceptions permitted if it can be demonstrated that no alternatives are available).

Low Toxicity Materials

Confirmation that all materials comply with the EU Risk Phrases (R-Phrases) Directive 67/548/EEC , Annex III. This can be in the form of evidence of purchase or manufacturer information.

EU Directive on Dangerous Substances 67/548/EEC :

http://ec.europa.eu/environment/chemicals/dansub/consolidated_en.htm

EU Directive 67/548/EEC Annex III :

http://ec.europa.eu/environment/chemicals/dansub/pdfs/annex3_en.pdf