

An MND Statutory Board

Our ref : APPBCA-2022-24

01 Dec 2022

## **See Distribution List**

Dear Sir/Madam

# **UPDATES TO THE APPROVED DOCUMENT (1 DECEMBER 2022)**

This circular is to inform the industry on the update of the Approved Document on 1 December 2022.

- There are no new requirements in this update. The update comprises mostly editorial changes, which are meant to improve clarity. Other than that, the rest of the updates comprises addition of some standards or codes as acceptable solutions. This is to relax the rules by having more options as acceptable solutions. The updates shall apply to all projects for which the first set of plans is submitted to the Commissioner of Building Control for approval on or after 01 June 2023.
- 3 For your information, a table highlighting all the updates and relevant explanatory comments is provided in Annex A. An electronic copy of the updated Approved Document can be downloaded from BCA's website from 1 December 2022 from this link:

https://www1.bca.gov.sg/docs/default-source/docs-corp-news-and-publications/publications/codes-acts-and-regulations/approveddoc.pdf

- We would appreciate if you could share this circular with your members. If you need any further clarifications, please contact us through BCA's Online Feedback Form at <a href="https://www.bca.gov.sg/feedbackform/">https://www.bca.gov.sg/feedbackform/</a>.
- 5 Thank you.

Yours faithfully

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BUILDING AND CONSTRUCTION AUTHORITY



# Annex A – COMPILED AMENDMENTS TO THE APPROVED DOCUMENT 1 DECEMBER 2022

C	CURRENT VERSION	7.02A		1 DE0	CEMBER 2022 VER	SION 7.03	COMMENTS
Section B Stru	Section B Structural Design and Construction						
B.3.3 Structural Design  B.3.3.1 The design of the building structures shall comply with the following Standards –		B.3.3 <b>Structural Design</b> B.3.3.1 The design of the building structures shall comply with the following Standards –					
Type of structures	When adopting Singapore or British design standards	When adopting Eurocodes		Type of structures	When adopting Singapore or British design standards	When adopting Eurocodes	
(c) Steel structures; composite steel and concrete structures	(i) Structural use of steelwork in building – BS 5950; and (ii) Design Guide on Use of Alternative Structural Steel Materials to BS 5950 and Eurocode 3 – BC 1.	(i) Design of steel structures - SS EN 1993 (ii) Design of composite steel and concrete structures - SS EN 1994; and (iii) Design Guide on Use of Alternative Structural Steel Materials to BS		(c) Steel structures; composite steel and concrete structures	(i) Structural use of steelwork in building – BS 5950; and (ii) Design Guide on Use of Alternative Structural Steel Materials to BS 5950 and Eurocode 3 – BC 1.	(i) Design of steel structures - SS EN 1993 (ii) Design of composite steel and concrete structures - SS EN 1994; and (iii) Design Guide on Use of Alternative Structural Steel Materials to BS	



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5950 and Eurocode 3 – BC 1.			5950 and Eurocode 3 – BC 1.	
(iv) Design Guide for Concrete Filled Tubular Members with High Strength Material – BC4			(iv) Design Guide for Steel- Concrete Composite Columns with High Strength Materials – BC4; and (v) Design	Editorial Changes Rules relaxation.
			Guide for Semi-rigid Composite Joints and Beams	Document (v) added as acceptable solution.
	Type of structures	When adopting Singapore or British design standards	When adopting Eurocodes	
	(o) Fastenings for use in concrete		(i) Design of concrete structures – Design of	Rules relaxation. Document (i) added as



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			fastenings for use in concrete – SS EN 1992- 4.	acceptable solution.
	Tune of	When adopting	When adopting	
	Type of structures	When adopting Singapore or British design standards	When adopting Eurocodes	
	(p) Fibre concrete structures		(i) Fibre concrete – Design of fibre concrete structures – SS 674	Rules relaxation. Document (i) added as acceptable solution.
B.3.7 Construction Materials	B.3.7 Construc	ction Materials		
B.3.7.1 Construction materials shall comply with the following Standards	B.3.7.1 Construction materials shall comply with the following Standards			



CURRENT VERSION 7.02A		1 DECEMBER 2022 VERSION 7.03		COMMENTS		
Type of materials	When adopting Singapore or British design standards	When adopting Eurocodes	Type of materials	When adopting Singapore or British design standards	When adopting Eurocodes	Editorial Changes
(m) Post- installed anchors		(i) Code of practice for the selection and installation of post-installed anchors in concrete and masonry – BS 8539	(m) Post-installed anchors and fastenings for use in concrete		(i) Code of practice for the selection and installation of post-installed anchors in concrete and masonry – BS 8539 (ii) Design of concrete structures – Design of fastenings for use in concrete – SS EN 1992-4.	Rules relaxation. Document (ii) added as acceptable solution.
Section E Staircases						
E.3.3 Width of st	E.3.3 Width of staircase		E.3.3 Width of st	aircase		
E.3.3.1 The clearance of the width of every staircase shall not be less than 900 mm.		E.3.3.1 The clears shall not be less the	ance of the width o han <mark>1000</mark> mm.	f every staircase		



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		Harmonisation of BCA & SCDF requirements
Note: The width is measured from the inner side of the wall, balustrade or handrail.	Note: If the projection of the handrail into the clear width does not exceed 80 mm on each side of the staircase, the width is measured from:  (a) The finished surfaces of the walls, if the staircase is enclosed on both sides by walls only; or  (b) The finished surface of the wall and the inner side of the balustrade, if the staircase has a wall on one side and a balustrade on the other side; or  (c) The inner sides of the balustrades if the staircase has balustrades on both sides.	Harmonisation of BCA & SCDF requirements



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	Min 1000 mm  ≤80mm  Section of Staircase	
	<u>Figure E.3.3.1(a) – Measurement of Clear Width</u> <u>with 80mm or less handrail projection</u>	
	If the projection of the handrail into the clear width exceeds 80 mm on one or more side of the staircase, the clear width of the staircase shall be measured from:	
	<ul> <li>(a) The <u>finished surface of the wall and the inner side of the handrail</u>, if the staircase has a wall on one side and a handrail on the other side; or</li> <li>(b) <u>The inner sides of the handrails</u> if the staircase has handrails on both sides.</li> </ul>	



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	Section of Staircase  Figure E.3.3.1(b) – Measurement of Clear Width more than 80mm handrail projection	
E.3.5 Landing	E.3.5 Landing	
E.3.5.3 The clear width of any landing, measured from the handrail or kerb (whichever protrudes further into the landing) to the wall or external railing of the landing, shall not be less than 900 mm. See Figure E.3.5.3(a) and (b) on how to measure landing width.	E.3.5.3 The clearance width of any landing shall not be less than 1000 mm. See Figure E.3.5.3(a) and (b) on how to measure landing width.	Harmonisation of BCA & SCDF requirements



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	00 min	
	1000	
	Figure E.3.5.3(a) Measurement of landing width	



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	Clear width boundary  Minimum one tread size  Figure E.3.5.3(b) Measurement of the width of an	
E 2.7 Stair Maaing	irregular landing	
E.3.7 Stair Nosing	Note: The requirements on stair nosing in Section E.3.7 do not apply to dwelling units including landed houses. For the avoidance of doubt, the requirements in Section E.3.7 apply to common property such as corridors, lift lobbies etc. within residential developments.	Definition added for clarity
Section G Ventilation		



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G.2.4 Despite paragraph G.2.2, mechanical ventilation may be provided to any of the following rooms or spaces in any residential development:	G.2.4 Despite paragraph G.2.2, mechanical ventilation may be provided to any of the following rooms or spaces in any residential development:	
<ul><li>(i) any fitness room;</li><li>(ii) any clubhouse;</li><li>(iii) any civil defence shelter;</li><li>(iv) any toilet, bathroom or lavatory;</li><li>(v) any basement.</li></ul>	<ul> <li>(i) any fitness room forming part of the communal area of common property;</li> <li>(ii) any clubhouse;</li> <li>(iii) any civil defence shelter;</li> <li>(iv) any toilet, bathroom or lavatory;</li> <li>(v) any basement.</li> </ul>	Editorial changes
Section K Lifts and Escalators		
K.3 Acceptable Solution	K.3 Acceptable Solution	
K.3.1 The requirements in paragraphs K.2.1 and K.2.2 are deemed to be satisfied if –	K.3.1 The requirements in paragraphs K.2.1 and K.2.2 are deemed to be satisfied if –	
(a) the lifts are designed and installed:	(a) the lifts are designed and installed:	
<ul> <li>(i) In accordance with the requirements of SS 550         <ul> <li>Code of Practice for Installation, Operation and Maintenance of Electric Passenger and Goods Lifts;</li> </ul> </li> </ul>	<ul> <li>(i) In accordance with the requirements of SS 550         <ul> <li>Code of Practice for Installation, Operation and Maintenance of Electric Passenger and Goods Lifts;</li> </ul> </li> </ul>	
(ii) with light curtain installed at the lift door as a door protective device that shall automatically initiate re-opening of the door(s) in the event of a person crossing the entrance during the closing movement, and that the light curtain:	(ii) with light curtain installed at the lift door as a door protective device that shall automatically initiate re-opening of the door(s) in the event of a person crossing the entrance during the closing movement, and that the light curtain shall have its nudging mode de-activated if	



CURRENT VERSION 7.02A	1 DECEMBER 2022 VERSION 7.03	COMMENTS	
<ul> <li>a. shall cover the door opening over the distance between at least 25 mm and 1600 mm above the car door sill;</li> <li>b. shall be capable of detecting obstacles of minimum 50 mm diameter;</li> <li>c. may be rendered inoperative in the last 20 mm of door closing gap; and</li> <li>d. shall have its nudging mode de-activated if nudging mode is provided.</li> <li>(iii) with a telephone, intercom system or any other communication device that enables notification or direct communication with personnel who can initiate an emergency response;</li> <li>(iv) with a video recorder that has the following minimum specifications –</li> </ul>	nudging mode is provided; and:  a. shall cover the door opening over the distance between at least 25 mm and 1600 mm above the car door sill;  b. shall be capable of detecting obstacles of minimum 50 mm diameter;  c. may be rendered inoperative in the last 20 mm of door closing gap; and  d. shall have its nudging mode de-activated if nudging mode is provided.  (iii) with a telephone, intercom system or any other communication device that enables notification or direct communication with personnel who can initiate an emergency response;	Editorial changes	
<ul> <li>a. Capacity to record 24 hours a day, 7 days a week;</li> <li>b. Capture the lift car, lift car door(s) and in-car floor indicator;</li> <li>c. Frame rate of at least 6 frames per second;</li> <li>d. Video resolution of at least 352 x 240 pixels or CIF CCTV resolution; and</li> <li>e. Storage of video footage of at least 30 days;</li> <li>and</li> <li>(b) the escalators are designed and installed:</li> <li>(i) in accordance with SS 626 – Code of Practice for Design, Installation and Maintenance of</li> </ul>	<ul> <li>(iii) provided with a video recorder that has the following minimum specifications –</li> <li>a. Capacity to record 24 hours a day, 7 days a week;</li> <li>b. Capture footage of the entire lift car, including in-car floor indicator, lift car door(s) and landing area outside the lift car in front of the lift doors;</li> <li>c. Frame rate of at least 6 frames per second;</li> <li>d. Video resolution of at least 352 x 240 pixels or CIF CCTV resolution; and</li> <li>e. Storage of video footage for at least 30 days;</li> </ul>	Editorial changes	





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	For the purposes of this part:	
	"light curtain: means an opto-electric device that is usually mounted at the lift doors to detect the presence of objects in the path of its light rays.	
K.3.2 The requirements in paragraphs K2.1 are deemed to be satisfied if vertical platform lifts and stairlifts which are primarily designed for persons with impaired mobility are designed, installed and operated in accordance with the requirements of –	K.3.2 The requirements in paragraphs K2.1 are deemed to be satisfied if vertical platform lifts and stairlifts which are primarily designed for persons with impaired mobility are designed and installed and operated in accordance with the requirements of —	Editorial changes
<ul> <li>(a) EN 81-41 – Safety rules for the construction and installation of lifts – Special lifts for the transport of persons and goods. Part 41: Vertical platforms intended for use by persons with impaired mobility; or</li> </ul>	<ul> <li>(a) EN 81-41 – Safety rules for the construction and installation of lifts – Special lifts for the transport of persons and goods. Part 41: Vertical platforms intended for use by persons with impaired mobility; or</li> </ul>	
<ul> <li>(b) EN 81-40 – Safety rules for the construction and installation of lifts – Special lifts for the transport of persons and goods. Part 40: Stairlifts and inclined lifting platforms intended for persons with impaired mobility; or</li> </ul>	(b) EN 81-40 – Safety rules for the construction and installation of lifts – Special lifts for the transport of persons and goods. Part 40: Stairlifts and inclined lifting platforms intended for persons with impaired mobility; or	
(c) ASME 18.1 – Safety standard for platform lifts and stairway chairlifts; or	(c) ASME A18.1 – Safety standard for platform lifts and stairway chairlifts; or	Editorial changes
(d) Other relevant standards which are acceptable to the Commissioner of Building Control.	(d) other relevant standards which are acceptable to the Commissioner of Building Control; and	
For the purposes of this part:	(e) except for stairlifts and chairlifts, with a	
"stairlift" means a motorised platform or seat installed in a stairway, which traverses the stairs when activated;	telephone, intercom system or any other communication device that enables notification or direct communication with personnel who	



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and	can initiate an emergency response; and	
"vertical platform lift" means a vertical lifting platform intended for use by people with impaired mobility, with or without wheelchair, travelling vertically between predefined levels along a guided path.	(f) for vertical platform lifts that are not installed in private homes solely for the use of the occupants, in addition to the above standards, they are provided with a video recorder that has the following minimum specifications –	
	(i) Capacity to record 24 hours a day, 7 days a week;	
	(ii) Capture footage of the entire lift platform and platform entrance, from floor to ceiling (if any), and landing area outside the lift platform in front of the landing doors;	
	(iii) Frame rate of at least 6 frames per second;	
	(iv) Video resolution of at least 352 x 240 pixels or CIF CCTV resolution; and	
	(v) Storage of video footage for at least 30 days.	
	For the purposes of this part:	
	"stairlift" means a motorised platform or seat installed in a stairway, which traverses the stairs when activated; and	
	"vertical platform lift" means a vertical lifting platform intended for use by people with impaired mobility, with or without wheelchair, travelling vertically between predefined levels along a guided path.	
K.3.3 The requirements in paragraph K2.1 are deemed	K.3.3 The requirements in paragraph K2.1 are deemed	Editorial changes



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to be satisfied if home lifts are designed, installed and operated in accordance with the requirements of –	to be satisfied if home lifts are designed <b>and</b> installed and operated in accordance with the requirements of –	
<ul> <li>(a) the SS 550 – Code of Practice for Installation,</li> <li>Operation and Maintenance of Electric Passenger and Goods Lifts; or</li> </ul>	(a) the SS 550 – Code of Practice for Installation, Operation and Maintenance of Electric Passenger and Goods Lifts; or	
(b) other relevant standards which are acceptable to the Commissioner of Building Control.	(b) other relevant standards which are acceptable to the Commissioner of Building Control; and	
For the purposes of this part:	(c) with a telephone, intercom system or any other	
"home lift" means a lift, not being common property, installed in a private home solely for the use of its occupants.	communication device that enables notification or direct communication with personnel who can initiate an emergency response."	
oodpariio.	For the purposes of this part:	
	"home lift" means a lift, excluding a stairlift or a vertical platform lift not being common property, installed in a private home solely for the use of its occupants.	
Section P Daylight Reflectance		
P.3 Acceptable Solution	P.3 Acceptable Solution	
P.3.1 The requirement in paragraph P.2.1 is deemed to be satisfied if the specifications set out in paragraphs P.3.2 to P.3.3 are complied with.	P.3.1 The requirement in paragraph P.2.1 is deemed to be satisfied if the specifications set out in paragraphs P.3.2 to P.3.3 are complied with.	
P.3.2 The material used for the building work is deemed acceptable if –	P.3.2 The material used for the building work is deemed acceptable if –	
a) the glass for the building work has a daylight	a) the glass for the building work has a daylight	



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reflectance not exceeding 20%  b) any material, other than glass, for the building work on —  (i) the façade of the building has a specular reflectance not exceeding 10%  (ii) the roof of the building, inclined at an angle not exceeding 20 degrees from the horizontal plane, has a specular reflectance not exceeding 10%  (iii) the roof of the building, inclined at an angle more than 20 degrees from the horizontal plane, has a daylight reflectance not exceeding 20% and a specular reflectance not exceeding 10%  c) emulsion paint on plastered or concrete surfaces has a specular reflectance not exceeding 10%	reflectance not exceeding 20%  b) any material, other than glass and paint on plastered or concrete surfaces, for the building work on —  (i) the façade of the building has a specular reflectance not exceeding 10%  (ii) the roof of the building, inclined at an angle not exceeding 20 degrees from the horizontal plane, has a specular reflectance not exceeding 10%  (iii) the roof of the building, inclined at an angle more than 20 degrees from the horizontal plane, has a daylight reflectance not exceeding 20% and a specular reflectance not exceeding 10%  c) emulsion paint on plastered or concrete surfaces has a specular reflectance not exceeding 10%	Editorial changes
Annex A – Structural design standards based on the Eurocodes and the corresponding Singapore National Annexes	Annex A – Structural design standards based on the Eurocodes and the corresponding Singapore National Annexes	



CURRENT V	ERSION 7.02A	1 DECEMBER 2	2022 VERSION 7.03	COMMENTS
Eurocode 2 : Design of concrete structures	Associated National Annex (NA) to be used for design	Eurocode 2 : Design of concrete structures	Associated National Annex (NA) to be used for design	
SS EN 1992-1-1	NA to SS EN 1992-1-1	SS EN 1992-1-1	NA to SS EN 1992-1-1	
Design of concrete structures.		Design of concrete structures.		
General rules and rules for buildings		General rules and rules for buildings		
SS EN 1992-1-2	NA to SS EN 1992-1-2	SS EN 1992-1-2	NA to SS EN 1992-1-2	
Design of concrete structures.		Design of concrete structures.		
General rules – Structural fire design		General rules – Structural fire design		
SS EN 1992-2	NA to SS EN 1992-2	SS EN 1992-2	NA to SS EN 1992-2	
Design of concrete structures.		Design of concrete structures.		
Concrete bridges – Design and detailing rules.		Concrete bridges – Design and detailing rules.		



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SS EN 1992-3  Design of concrete structures.  Liquid retaining and containment structures.	NA to SS EN 1992-3	SS EN 1992-3 Design of concrete structures. Liquid retaining and containment structures.  SS EN 1992-4 Design of concrete structures Design of fastenings for use in concrete	NA to SS EN 1992-4	Updates to codes





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