Central Data Bank
List of Construction Systems

A. General

Department:	Buildings
Type of construction system:	Concrete composite slabs with profiled steel sheeting/ Composite deck with profiled sheeting
Applications:	Structural concrete composite slabs with FRP requirement/ Non-combustible composite deck with profiled sheeting

B. Acceptance criteria

B.1 Concrete composite slabs with profiled steel sheeting:

Design/Testing standards:

Structural design and testing of concrete composite slabs with profiled steel sheeting should be in accordance with BS 5950: Part 4 or Code of Practice for the Structural Use of Steel 2011 (2021 Edition).

Fire test/assessment should be in accordance with BS 476: Parts 20 to 24: 1987 or other equivalent standards.

Conditions of Acceptance:

- Applications with any deviation from those details given herein such as slab thickness, metal sheet thickness, reinforcement details etc. shall be considered on a project basis.
- To satisfy section 6.5 of the Code of Practice for Fire Resisting Construction 1996 or part E of section 2 of the Code of Practice for Fire Safety in Buildings 2011, valid and full fire test/assessment report shall be submitted to demonstrate that the concrete composite slab system has been tested in accordance with or assessed against BS 476: Parts 20 to 24: 1987 by a laboratory accredited under HOKLAS or recognised under mutual recognition agreements/arrangements with HOKLAS, or one of the assessing organisation listed in APP-118.

B.2 Composite deck with profiled sheeting:

Design/Testing standards:

Structural design and testing of composite deck should be in accordance with BS EN 14509.

Fire test/assessment should be accordance with BS476: Part 4: 1970 or other equivalent standards.

Conditions of Acceptance:

- Composite deck with profiled sheeting shall be properly installed in accordance with the manufacturer's specification/ recommendation.
- To satisfy part E of section 5 of the Code of Practice for Fire Safety in Buildings 2011, valid and full fire test/assessment report shall be submitted to demonstrate that the composite deck with profiled sheeting has been tested in accordance with or assessed against BS 476: Part 4: 1970 by a laboratory accredited under HOKLAS or recognised under mutual recognition agreements/arrangements with HOKLAS, or one of the assessing organisation listed in APP-118.

Reference List of Concrete composite slabs with profiled steel sheeting/ Composite deck with profiled steel sheeting

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report					Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report	Validity Date		
BD-PS 001	Bondek II Composite Decking (comprising a reinforced concrete topping on Bondek II profiled steel sheeting)	BHP Steel Building Products Singapore Pte. Ltd.	Bondek II profiled steel sheeting shall be rolled-formed using ZINC-HI-TEN G550 hot-dipped zinc coated (to coating class Z275) structural steel strip conforming to steel grade G550 in AS1397 and to the specifications given in appendix A attached to BD's letter Ref. (17) in BD GR SEG/PS(2) of 15.9.1995. The structural steel strip for Bondek II profiled steel sheeting shall have a bare metal thickness between 0.8mm and 1.0mm in increments of 0.05mm., a specified yield strength and a guaranteed minimum tensile strength of 550MPa. The minimum thickness of concrete topping (measured from soffit of profiled steel sheeting to the top of the concrete) shall be 120mm.	Composite decking comprising a reinforced concrete topping on Bondek II profiled steel sheeting for 2 hours FRP in structural works.	BS 476: Parts 20 & 21: 1987	N/A	Warrington Fire Research Centre	MJ4510R	December 1992	January 1995	18/01/2005	No-objection letter issued in 1995. A minimum steel area of 253mm^2/m placed on the Bondek II ribs over the middle 40% of the span and cranked at the ends so as to continue over the supports with a concrete cover of 19mm from the top of the concrete. A minimum steel area of 599mm^2/m placed over the supports with a concrete cover of 19mm from the top of the concrete and extending 25% into the span from the center line of the supports. The reinforcement shall comply with BS4449: 1988 and have a minimum of 12% elongation at failure. The span shall be less than or equal to 3.0m. The design live load shall be 7.94kN/m^2 maximum.

Reference List of Concrete composite slabs with profiled steel sheeting/ Composite deck with profiled steel sheeting

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report					Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report	Validity Date		
BD-PS 002	Rebardek 50-600 (0.75mm thick) Composite Decking (comprising a reinforced concrete topping on Rebardek 50-600 profiled steel sheeting)	P&Ls' Building Material (HK) Co., Ltd.	Rebardek 50-600 is a profiled hot-dip zinc-coated (275g/m^2) steel sheeting of grade SGC570 in compliance with JIS G3302.	Composite decking comprising a reinforced concrete topping on Rebardek 50-600 (0.75mm thick) profiled steel sheeting for 2 hours FRP in structural works.	BS 476: Parts 20 & 21: 1987	UKAS	Chiltern International Fire Ltd.	Chilt/RF03036	April, 2003	next review: April, 2008	21/07/2006	Structural design of the composite floor system has been carried out in accordance with BS5950: Parts 6 & 4 for both the temporary and permanent stages. Parameters adopted in the structural design have been based on a series of parametric tests carried out in accordance with BS5950: Part 4 by the Hong Kong Polytechnic University, report on testing of composite slabs with profiled steel decking to BS5950: Part 4 – Rebardek 0.75mm and 1.0mm of November 1999 refers. Fire resistant design of the composite floor system has been carried out in accordance with BS5950: Part 8 by the Hong Kong Polytechnic University and has been reviewed by Chiltern International Fire Ltd., report no. FEE/F03008 refers. Concrete topping of minimum grade strength of 30MPa.
							The Hong Kong Polytechnic University	Report title: Structural Design of Profiled Steel Decking to BS5950 – Rebardek 50-600 G550 as Composite Slabs to BS5950: Parts 4, 6 & 8	April, 2003	N/A		
						UKAS	Chiltern International Fire Ltd.	FEE/F03008	May, 2003	next review: April, 2008		

Reference List of Concrete composite slabs with profiled steel sheeting/ Composite deck with profiled steel sheeting

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report					Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report	Validity Date		
BD-PS 003	Lysaght Bondek II G550 (1.0mm thick) Composite Decking (comprising a reinforced concrete topping on Bondek II profiled steel sheeting)	Bluescope Lysaght	Bondek II profiled steel sheeting shall be rolled-formed using ZINC-HI-TEN G550 hot-dipped zinc coated (to coating class Z275) structural steel strip conforming to steel grade G550 in AS1397	125mm thick composite slab comprising a reinforced concrete topping on 1.0mm thick Bondek II G550 profiled steel sheeting for 2 hours FRR in structural works.	BS 476: Part 21: 1987	HOKLAS	Research Engineering Development Façade Consultants Limited The Hong Kong Polytechnic University	R10L08A Technical Report on Testing of Composite Slabs to BS5950:Part 4 0.75mm and 1.0mm Bondek II G550	19 October 2011 April 2003	N/A N/A	01/09/2014	Structural design of the composite floor system has been carried out in accordance with the Code of Practice for Structural Use of Steel 2011 for both temporary and permanent stages. Parameters adopted in the structural design have been based on a series of parametric tests carried out in accordance with BS5950: Part 4 by the Hong Kong Polytechnic University. Fire resistant design of the composite floor system has been carried out in accordance with the Code of Practice for Structural Use of Steel 2011 with justification by fire test report no. R10L08A. Concrete topping of minimum grade strength of 30MPa.

Reference List of Concrete composite slabs with profiled steel sheeting/ Composite deck with profiled steel sheeting

Ref. No.	Product Name	Name of Manufacturer	Material Category	Application	Compliance Testing Standard	Details of Test or Assessment Report					Date of Posting on CDB	Remarks / Comments
						Name of Laboratory Accreditation Body	Name of Laboratory / Assessing Organization	Report No.	Date of Test / Assessment Report	Validity Date		
BD-PS 004	Megatec G3 Proprietary Sandwich Panel (Overall 80mm thick)	China Wing Engineering Ltd.	Megatec G3 sandwich panel comprising of 0.8mm thick steel top sheet and 0.6mm thick bottom sheet, both comply with Grade S350GD+AZ150 to BS EN 10346:2015	Non-combustible roof metal cladding system	BS 476: Part 4: 1970	HOKLAS 032	CASTCO TESTING CENTRE LTD	Report No. FL0131011-01-NCT, FL0131025-01-NCT, FL0131025-02-NCT	26-Oct-13	N/A	11/10/2021	Structural design of the sandwich panel is substantiated in accordance with BS EN 14509.
					BS EN 14509:2013	N/A	WILSON CURTAIN WALL CONSULTANT (HK) LTD	Report No. 3252RPT – 130729c	29-Jul-13	N/A		
								3252RPT – 130621-Shear-w	20-Jun-13	N/A		
								3252RPT-bend-130621w	21-Jun-13	N/A		
								4745RPT-T-C-170418w	18-Apr-17	N/A		