

MONDAY,18									
8:30 - 9:00									
OPENING CEREMONY									
9:00 - 10:30									
Chairman	G.A. Plizzari			KEYNOTE LECTURE	J. Cairns: Bond of embedded steel reinforcement : background to the fib Model Code 2010				
				KEYNOTE LECTURES	G. Balazs: General overview of the new Model Code				
10:50 - 13:00									
Chairmen				R. Eligenhausen - G. Metelli Room 1			Chairmen		
				Room 2			P. Gambarova - T. Kanakubo Room 3		
I - GENERAL ASPECTS OF BOND	Session	Title	Speaker	Session	Title	Speaker	Session	Title	Speaker
		Influence of geometric, strain and size effects on bond in structural concrete	A. Muttoni	VIII - BOND IN NEW TYPES OF CONCRETE OR REINFORCEMENT	Bond splitting strength of lap splice embedded in ultra high performance fibre reinforced concrete under direct tension	F. Lagier	V - ASSESSMENT OF DEGRADATIONS	Anchorage of corroded bars: eccentric pull-out tests and numerical analyses	K. Zandi Hanjari
		A. Muttoni, M. Fernandez Ruiz			F. Lagier, B. Massicotte, J.-P. Charron			K. Zandi Hanjari, D. Coronelli, K. Lundgren, M. Plos	
		Effects of construction details in existing concrete structures on bond	D. Zwicky		Lapped splices in UHPC joints	J. Schoening		Modelling bond resistance of corroded steel reinforcement	J. Ozbolt
		D. Zwicky			J. Schoening, J. Hegger			J. Ozbolt, F. Oršanić, M.M Kušter	
		The divine proportion in the bond between steel and concrete	A. Fantilli		Behaviour of lap splices in ultra high strength concrete			Influence of bar diameter and concrete cover on bond degradation due to corrosion	C. Fischer
		A. P. Fantilli, B. Chiaia			D. Weisse, K. Holschemacher			C. Fischer, J. Ozbolt	
		Consequences and solutions to our abysmal neglect of the bond-slip behaviour in reinforced concrete	D.J. Oehlers		A novel microstructural approach for modeling the adhesive power of UHPC	B. Freytag		Influence of reinforcement corrosion on bond strength	J.W. Cairns
		D. J. Oehlers, P. Visintin, M. Haskett, J. F. Chen			B. Freytag, J. Juhart, G. Santner, E. Baumgartner			J. Cairns, S.S. Ayop	
		The influence of the damage state of the surrounding concrete on the bond stress-slip relationship	M. Auer		Bond and development of large-diameter bars in well-confined concrete	J. Murcia-Delso		Transverse stress on corroded steel reinforcement bars in concrete	A. Bossio
		M. Auer, L. Stempniewski			J. Murcia-Delso, B. Shing, A. Stavridis			A. Bossio, M. Montuori, F. Bellucci, G. P. Lignola, A. Prota, E. Cosenza, G. Manfredi	
		Bond strength prediction using artificial neural network technique	M. Makni		Bond of new deformed reinforcing bars with high and low alternating ribs	G.H. Hong		Bond strength of highly corroded reinforcement and cover delamination	D. Coronelli
	M. Makni, A. Daoud, M. A. Karray, M. Lorrain		O. C. Choi, G. H. Hong, S. C. Chun			D. Coronelli, K. Zandi Hanjari, K. Lundgren			
	Analysis of the influence of rebar geometry variations on bonding strength in the pull-out test	M. Barbosa	Bond strength of vitreous enamel coated rebar to concrete	J.S. Volz	The effect of rebar corrosion on the bond strength of reinforced concrete structures manufactured using cement replacement materials	R. J. Lark			
	L.C.P. Silva Filho, B. Vale Silva, V.I. Dal Bosco, L.E.S. Gomes, M.P. Barbosa et al.		C. Wu, G. Chen, J. S. Volz, R. K. Brow,M. L. Koenigsterin		A. Elbusaei, R. J. Lark, D. R. Gardner				
	Bond behavior of ribbed bars produced in coils	C. Bosco	Influence of bar diameter and placement on top-bar effect in self-compacting concrete	P. Desnerck	Influence of frost on the bond between steel and concrete	K. Zandi Hanjari			
	C. Bosco, F. Tondolo		P. Desnerck, G. De Schutter, L. Taerwe		K. Zandi Hanjari, P. Utgenannt, K. Lundgren, M. Plos				
14:00 - 16:10									
Chairmen				M. Savoia - K. Zandi Hanjari Room 1			Chairmen		
				Room 2			G. Mancini - O.C. Choi Room 3		
I - GENERAL ASPECTS OF BOND	Session	Title	Speaker	Session	Title	Speaker	Session	Title	Speaker
		Effect of bond behaviour of rebars and its evaluation by simplified test specimens	J. Hofmann	VIII - BOND IN NEW TYPES OF CONCRETE OR REINFORCEMENT	Impact of water to binder ratio and silica fume content on bond properties of self-compacting concrete cube specimens	I.P. Sfikas	V - ASSESSMENT OF DEGRADATIONS	Evaluation of deteriorated reinforced concrete bridges: effect of bond on flexural and shear residual capacity	M.A. Polak
		A. Wildermuth, J. Hofmann			I.P. Sfikas, K.G. Trezos			J. Luckai, M.A. Polak, S. Walbridge	
		APULOT Test: a Tool for Concrete's Quality Control based on Bond Performance	E. Garcia-Taengua		Bond characteristics of self consolidating reinforced concrete beams	T.K. Hassan		Limit state analysis for evaluating the reliability level of reinforced concrete elements with small separating cracks	M. Just
		E. Garcia-Taengua, M. Requena-Bueno, J. R. Marti-Vargas, P. Serna-Ros			M. O. El-Sawy, T. K. Hassan, A. Abdelrahman			M. Just, M. Curbach	
		Japan Concrete Institute TC Activities on Bond Behavior and Constitutive Laws in RC (Part 1: Research Survey on Bond Problems)	Y. Sato		Bond of deformed reinforcing steel bars embedded in steel fibre reinforced self-compacting concrete	S. Nejadi		Preliminary results on tension stiffening in heat-exposed R/C tension members	Bamonte
		Y. Sato, H. Shima, T. Kanakubo			S. Nejadi, F. Aslani			P. Bamonte, S. Biancini, F. Lo Monte	
		Japan Concrete Institute TC Activities on Bond Behavior and Constitutive Laws in RC (Part 2: Theoretical Behavior by Bond Laws)	A. Yasojima		Bond behavior in self compacting concrete filled tubes	G. Rosati		Influence of high temperatures on bond	G.L. Balázs
		A. Yasojima, T. Kanakubo, H. Shima			F. Giussani, G. Muciaccia, G. Rosati			É. Lublőy, G. L. Balázs	
		Japan Concrete Institute TC Activities on Bond Behavior and Constitutive Laws in RC (Part 3)	T. Kanakubo		Bond behavior of pumice aggregate self-compacting concrete (PASCC)	M.I. Kaffetzakis		Effect of heat on the adhesionbetween post-installed bars and concrete using polymeric mortars	N. Pinoteau
		T. Kanakubo, Y. Sato, Y. Uchida, K. Watanabe, H. Shima			M. I. Kaffetzakis, C. G. Papanicolaou			N. Pinoteau, P. Pimentia, S. Rémond, T. Guillet, Ph. Rivillon	
		Development of positive and negative moment reinforcements	S-G. Hong		Bond performance of rubber particles in the self-compacting concrete	M. Emiroğlu		Bond model for FRP bars in concrete members under fire condition	E. Nigro
	S-G. Hong, E-J. Lee, D-J. Kim, S-C. Chun		M. Emiroğlu, S. Yildiz, M. H. Keleştemur, O. Keleştemur			E. Nigro, A. Bilotta, G. Cefarelli, G. Manfredi, E. Cosenza			
IV - TRANSFER AND DEVELOPMENT	Bond behavior of strands in UHPC - Calculation model	G. Bertram	Effects of waste ceramic powders on the bond strength of self-compacting concrete	M. Emiroğlu	Test of FRP-to-concrete bond behavior under impact loading	J.F. Chen			
	G. Bertram, J. Hegger		S. Subaşı, H. Öztürk, M. Emiroğlu		J.F. Chen, X.Q. Li, Y. Lu, I.M. May, T.J. Stratford, R. O'Sullivan, A. Sheil				
	Fatigue behavior of Bond Anchorage in Pretensioned Concrete	S. Geßner	Bond between reinforcement and self-compacting steel-fibre-reinforced concrete	K. Lundgren	Residual bond strength in blast-damaged RC specimens: testing and modeling	G. Michaloudis			
	J.Hegger, S. Geßner		A. Jansson, I. Löfgren, K. Lundgren, K. Gylltoft		N. Gebbeken, T. Döge, G. Michaloudis				
16:30 - 18:10									
Chairmen				A. Muttoni - C. Bosco Room 1			Chairmen		
				Room 2			K. Lundgren - J. Hofmann Room 3		
IV - TRANSFER AND DEVELOPMENT	Session	Title	Speaker	Session	Title	Speaker	Session	Title	Speaker
		Unanticipated bond failure over supporting band beams in grouted post-tensioned slab tendons with little or no initial prestress	R.I. Gilbert	VIII - BOND IN NEW TYPES OF CONCRETE OR REINFORCEMENT	Crack width control for elements reinforced with rebars and recycled steel fibres with particular regard to integral structures: an experimental and theoretical study	G. Grolí	VII - BOND UNDER SEVERE LOADING CONDITIONS	Behavior of bonded anchor under simulated seismic crack movement conditions	G. Rosati
		R. I. Gilbert			G. Grolí, A. Pérez Caldentey			G. Muciaccia G. Rosati	
		Test method to characterize bond creep in pretensioned concrete	J.R. Marti-Vargas		Pull-out tests on GFRP reinforcing bars	R. Füllsack-Köditz		Bond in reinforced concrete under transverse tension	M. Just
		J. R. Marti-Vargas, L. Caro, E. Garcia-Taengua, P. Serna			M. Kurth, J. Hegger, R. Füllsack-Köditz			L. Lemnitzer, M. Just, M. Curbach	
		Transfer bond-slip-strain relationship of prestressing stand in pretensioned prestressed concrete members	H. Park		Experimental bond analysis of FRC element reinforced with steel bars	M.A. Aiello		Bond fatigue in reinforced concrete under transverse tension	A. Lindorf
		H. Park, J. Y. Cho, Z. U. Din, K. Y. Choi, J. S. Lee			G. Centonze, M. Leone, M. A. Aiello			A. Lindorf, M. Curbach	
		Assessment of existing bond formulations for pre-stressed concrete elements	C. Pellegrino		Modelling of bond and tension stiffening in FRP RC tensile members	M. Baena		Bond characterization of ribbed bars subjected to repeated and reversed actions	A.S. Louro
		C. Pellegrino			M. Baena, I.I. Torres, A. Turon & I. Vilanova			A.S. Louro, M. Pipa	
		Strand draw-in vs. transfer length in prestressed concrete girders	C. Vázquez-Herrero		Experimental validation of different approaches in modeling tension-stiffening of bending members reinforced with steel and GFRP bars	R. Jakubovskis		Development and validation of an analytical bond model for cyclic excitations	E. Mazzarolo
		C. Vázquez-Herrero, I. Martínez-Lage, F. Martínez-Abella, J. Eiras-López			G. Kaklauskas, V. Gribniak, R. Jakubovskis, M. Juknys			E. Mazzarolo, L. Berto, B. Brisighella, A. Saetta, R. Scotta, T. Zordan	
		Static and dynamic testing on prestressed concrete slab elements with artificial bond deficiencies	J. Mahowald					Numerical analysis of cracked railway bridge decks subjected to cyclic loading	C.F. Sousa
	J. Mahowald, S. Maas, D. Waldmann and A. Zuerbes					C. F. Sousa, R. Calçada, J. F. Rocha, A. S. Neves			

TUESDAY,19								
9:00 - 10:30								
Chairman	S.J. Pantazopoulou		KEYNOTE LECTURE	P. Gambarova: Bond in reinforced concrete: where do we stand today?				
			KEYNOTE LECTURE	G. Mancini: assessment and strengthening of existing structures				
10:50 - 13:00								
Chairmen			R. Felicetti - K. Lundgren Room 1			Chairmen		
M. Pecce - Fantilli Room 2			J. Ozbolt - D. Coronelli Room 3					
Session	Title	Speaker	Session	Title	Speaker	Session	Title	Speaker
III - ANCHORAGES AND LAPS	Effect of casting position and bar shape for plain steel reinforcement	L. Feldman	VIII - BOND IN NEW TYPES OF CONCRETE OR REINFORCEMENT	Experimental and theoretical study on bond behavior of GFRP bars in steel fiber reinforced self compacting concrete	H. Mazaheripour	VII - BOND UNDER SEVERE LOADING CONDITIONS	Structural effects of bond damage due to highly repeated loading	C. Zanuy
	M. Sekulovic MacLean, L. Feldman			H. Mazaheripour, J.O. A.Barros, M. Pepe, A. Giliberti, E. Martinelli			C. Zanuy, L. Albajar, P. De La Fuente	
	Bond strength between reinforcement and self-compacting concrete	M. Sonebi		Bond slip and crack development in FRC and regular concrete specimens longitudinally reinforced with FRP or steel under tension loading	L.H. Larusson		The contribution of reinforcement to the cyclic behavior of beam hinges	P. Visintin
	M. Sonebi, D. Cleland, I. Anuar			L. H. Larusson, G. Fischer			P. Visintin, D.J. Oehlers	
	Investigating the state of stress along lap splices	S.J. Pantazopoulou		Study on size effect in bond splitting behavior of ECC	K. Asano	Bond performance in the DMRF critical regions	J.N. Bastos	
	S. P. Tastani, E. S. Brokalaki, S.J. Pantazopoulou			K. Asano, T. Kanakubo		J.N. Bastos		
	Lapped joints of bars in bundles	J. Cairns		Experimental bond tests of steel bars embedded in lightweight concrete with EPS	M. Pecce	II - MODELLING	Bearing Angle Model for Bond Analysis of Reinforcing Bars to Concrete	O. C. Choi
	J. Cairns, G. Metelli			M. Pecce, F. Ceroni, F. Bibbo, S. Acerno			O. C. Choi, J. R. Lee	
	Bond behaviour of hooked rebars for application in steel-to-concrete joints	J. Hofmann		Theoretical and experimental investigation on bond between steel rebars and recycled aggregate concrete	M. Breccolotti		FE modeling of bond-slip response including steel strains	J. Santos
	W. Berger, R. Eligehausen, J. Hofmann			M. Breccolotti, A. D'alesandro, A.L. Materazzi			J. Santos, A. A. Henriques	
Seismic bond model for cast-in-place and post-installed reinforcing bars	C. Mahrenholtz	Behaviour of RC tie-beams reinforced by flat steel rebars - Numerical modelling of the rebar / concrete interface	T.S. Phan	Bond between steel-concrete: numerical analysis of the influence of geometrical parameters and the anchorage length	M.P. Barbosa			
C. Mahrenholtz, R. Eligehausen, J. Hofmann		T.S. Phan, J.L. Tailhan, P. Rossi, Ph. Bressollette, F. Mezghani		A.J. Tavares, M.P. Barbosa, T.N. Bittencourt, L.A.G. Bittencourt Junior, M. Lorrain				
Behaviour of RC elements with inadequate lap splices, before and after upgrading by welding of reinforcement	P. Chronopoulos	Bond interaction between flat stainless steel rebars and traditional and self compacting concrete	D. Ertzibengoa Gaztelumendi	Application of a closed-form solution for simulating bond between concrete and steel in service conditions	P. Bamonte			
P. Chronopoulos, C. Trezos, M. Chronopoulos		D. Ertzibengoa Gaztelumendi, S. Matthys, L. Taerwe		P. Bamonte, M. Valente				
Experimental evaluation on bond and bearing contributions in compression splice	S.C. Chun	Investigation on bond mechanisms of innovative small-scale shear connectors between steel and concrete	M. Gündel	Modeling of bond behaviour by means of sequentially linear analysis and concrete-to-steel interface elements	S.W.H. Ensink			
S.C. Chun, S.H. Lee		U. Reising, M. Schleser, J. Schoene, J. Hegger, Gallwoszus, M. Feldmann, Kopp, M. Gündel		S.W.H. Ensink, A.V. Van De Graaf, A.T. Slobbe, M.A.N. Hendriks, J.A. Den Uijl, J.G. Rots				
14:00 - 16:10								
Chairmen			J. Cairns - P. Bamonte Room 1			Chairmen		
G.L. Balázs - M. Preti Room 2			D. Oehlers - A. Marini Room 3					
Session	Title	Speaker	Session	Title	Speaker	Session	Title	Speaker
III - ANCHORAGES AND LAPS	Bond, slip and cracking within the anchorage length of deformed reinforcing bars in tension	M. Mazumder	VI - BONDED AND HEADED ANCHORS	On the resistance of supplementary reinforcement for headed fastenings	J. Buják	II - MODELLING	Modeling reinforcement-to-concrete bond	S.J. Pantazopoulou
	R. I. Gilbert, M. Mazumder, Z-T. Chang			J. Buják, F. Bahlleda, T. Leinonen			S. P. Tastani, S.J. Pantazopoulou	
	Anchorage in naturally corroded specimens taken from existing structures	M. Tahershamsi		Recommended design procedures for post-installed bonded reinforcing bars in concrete structures	J. Silva		Numerical modeling of bond in cracked reinforced concrete elements	P. Bernardi
	M. Tahershamsi, K. Zandi Hanjari, K. Lundgren, M. Plos			F. Charney, K. Pal, J. Silva			P. Bernardi, R. Ceroni, E. Michelini	
	Cost-efficient anchorage of steel reinforcement with standard bend,	U. Grziwa		Concrete splitting for rebars post-installed with high bond adhesives	J. Kunz		Investigating the effects of reinforcement arrangement on the anchorage of reinforcement using the three-dimensional discrete analysis	D. Hayashi
	C-A. Graubner, U. Grziwa, T. Proske, M. Heimann			N. Randl, J. Kunz			D. Hayashi, K. Nagai, B. Suryanto	
	Bond behaviour of FRP NSM systems bonded over concrete elements	M. Pecce		Performance of expansion and bonded anchors installed into concrete in comparison to limestone and granite	M. Tóth		Discrete-Like Crack Simulation by Smeared crack based FEM --Reinforced Concrete Wall Subjected To Shrinkage	Y. Sato
	F. Ceroni, M. Pecce, A. Bilotta, E. Nigro			M. Tóth, V. Hlavická, Ě. Lubløy, Á. Török, G.L. Balázs			Y. Sato, K. Naganuma	
	Influence of member-specific effects on the bond force transfer of reinforced concrete strengthened with externally bonded CFRP-strips	W. Finckh		Recommendations for Allocating Tear-Out Testing Procedure for Anchors and Determining Design Tear-Out Load	A. Granovskiy		Mesosopic modelling of the interaction between steel reinforcement and early-age cracking during cement hydration	A. Daoud
	W. Finckh, K. Zilch			A. Granovskiy & D.Kiselev			A. Daoud, O. Maurel, C. Laborerie	
X - BOND OF FRPs OR OVERLAY MATERIALS	Experimental study of bond stress for near surface mounted basalt fibre reinforced polymer strips on concrete	S.E. Taylor	VII - BOND UNDER SEVERE LOADING CONDITIONS	Performance of closely installed anchor pairs in low strength concrete under tension	T. Gurbuz	II - MODELLING	Numerical investigation of the effect of bond slip and concrete shrinkage	S.E. Dritsos
	T. Martin, D. Cleland, D. Robinson, S.E. Taylor			T. Gurbuz & A. Ilki			A.P. Lampropoulos, S.E. Dritsos	
	Bond behavior of carbon laminate strips and rods into concrete by pullout-bending tests	B. Fiorio		Prediction of the creep behavior of bonded anchors until failure	T. Kraenkel		Influence of bond in the seismic performance of substandard exterior rc beam-column joints	R. Eligehausen
	A. Merdas, B. Fiorio, N-E. Chikh			T. Kraenkel, D. Lowke, C. Gehlen			G. Genesio, R. Eligehausen, S. Pampanin	
	Fracture-based model for mixed mode cracking of FRP strips glued on concrete	A. Caggiano		Material versus system testing of bonded anchorage	A. Unterweger		Modelling of exterior beam to column joint in '60-70s RC existing buildings	F. Messali
	A. Caggiano, E. Martinelli			A. Unterweger, R. Mihala, P. Spyridis, K. Berzmeister			P. Riva, C. Beschi, G. Metelli, F. Messali	

WEDNESDAY,20											
9:00 - 10:30											
Chairman A. Nanni			KEYNOTE LECTURES		D. Oehlers: the ideal bond characteristics for reinforced concrete members						
			KEYNOTE LECTURES		R. Eligehausen: anchorage of headed and post-installed anchors						
10:50 - 13:00											
Chairmen			M.A. Aiello - I. Gilbert Room 1			Chairmen			G.L. Balázs - M. di Prisco Room 2		
Chairmen			P. Riva - S.J. Pantazopoulou Room 3								
Session	Title	Speaker	Session	Title	Speaker	Session	Title	Speaker			
X - BOND OF FRPs OR OVERLAY MATERIALS	Bond between old-to-new concrete interfaces	E.C. Apostolidi	IX - BOND BETWEEN FIBERS AND CONCRETE	Pull out behaviour of macro synthetic fibres: effects of fibre type, matrix strength and microcracking	R. Zerbino	II - MODELLING	Modelling the re-anchoring of ruptured tendon in bonded post-tensioned concrete	A.O. Abdelatif			
	E.C. Apostolidi, N. Karela, S.E. Dritsos			M. E. Bossio, M. C. Torrijos, R. Zerbino, G. Giaccio			A.O. Abdelatif, J. S. Owen, M. F. M. Hussein				
	Bond behavior of concrete elements strengthened with NSM CFRP laminate strips under wet-dry cycles	J. Sena-Cruz		Bond properties of mineral micro-fibre	R. Felicetti		Cohesive-frictional modeling of bond and splitting action of prestressing wire	J.C. Galvez			
	J. Sena-Cruz, P. Fernandes, P. Silva, J. Xavier, J. Barros, M. Coelho			R. Felicetti			J. M. Benítez, J. C. Galvez, D. A. Cendón, M. J. Casati				
	Anchorage performance of RC beams strengthened using prestressed NSM CFRP under fatigue loading	R. El-Hacha		Pull out tests on thin elements made of UHPFRC – Experimental study	J. Mittelstädt		An analytical model for simulating the bond of prestressed concrete during the prestressing force release	J.M. Benítez			
	F. Oudah, R. El-Hacha			J. Mittelstädt, W. Sobe			J. M. Benítez, J. C. Galvez				
	Anchorage system to prestress NSM CFRP strip: effects of bond and anchor dimensions on the interfacial stress distributions and bond performance	R. El-Hacha		Phenomenological modelling of ageing effect of AR-glass multifilament yarns crack bridging behavior in cement-based matrices	M. Butler		A three-dimensional approach on the CFRP-concrete bond behavior	P. Neto			
	H. Y. Omran, R. El-Hacha			M. Butler, V. Mechtcherine			P. Neto, J. Alfaiate, J. Vinagre				
	Experimental analysis of twist-off and pull-off testing methodologies to measure the bond strength between GFRP and concrete	A. Nanni		Bond constitutive relationship for steel fiber reinforced self-compacting concrete	S. Nejadi		Assessments of some analytical models for the bond strength between FRP and concrete	T. D'Antino			
	S. Verbovsky, G. Loretto, A. DeLuca, A. Nanni, F. Focacci			F. Aslani, S. Nejadi			T. D'Antino, C. Pellegrino				
Analysis of the interface performance of concrete elements reinforced with sintetic, natural and steel FRP materials	M.A. Aiello	Post-cracking characterisation of concrete beams reinforced with mixed long/short steel fibers	A. Caggiano	Implementation of fibre pull-out behaviour in a finite element model for SFRC	T. Soetens						
M. Leone, M. S. Sciolti, M.A. Aiello		A. Caggiano, M. Cremona, C. Faella, C. Lima, E. Martinelli		T. Soetens, S. Matthys							
Composite structures made from ultra-high performance concrete and fiber-reinforced polymers	F. X. Forstlechner	Pull-out behaviour of multifilament yarns embedded in a cementitious matrix: influence of the impregnation process on strength and ductility	J.L. Gallias	Mechanical model to simulate the NSM FRP strips shear strength contribution to a RC beam: influence of each parameter on the force transferred by a single strip to a prism of plain concrete	V. Bianco						
F. X. Forstlechner, S. Peters		B. Fiorio, H. Haljewifi, J. L. Gallias		V. Bianco, G. Monti, J. A. O. Barros							
Bond behavior between concrete and perforated metal-sheets for use in composite slabs	S. Pirringer	Bond of steel fibres in UHPC - a contactmechanical model for the pull-out of single fibres	T. Stengel								
S. Pirringer, J. Kollegger		T. Stengel, P. Schießl									