



Prof. Giuseppe Tiberti

Curriculum Vitæ

Academic Experiences:

Present Position: Associate Professor of Structural Engineering, University of Brescia (from 2017), Department of Civil, Environmental and Architectural Engineering and Mathematics (DICATAM).

Prior Positions: Assistant Professor of Structural Engineering, University of Brescia (from 2013 to 2017);
Research fellowship holder, University of Brescia (from 2005 to 2013).

Giuseppe Tiberti is an Associate Professor of “Structural Design” at the University of Brescia, Department of Civil, Environmental and Architectural Engineering and Mathematics (DICATAM). He received his Ph.D. in “Materials for Engineering” in 2009; his Ph.D. thesis was titled “Concrete tunnel segments with combined traditional and fiber reinforcement: optimization of the structural behaviour and design aspects”.

His research activity mainly concerns the structural applications of conventional and innovative concrete structures. In particular, he has been working on tension stiffening effects in concrete structural elements and structural applications of fiber reinforced concretes. In this regard, his interests especially include tunnel linings made by precast segments in fiber reinforced concrete and concrete pavements. He has been involved in many research activities based on experimental studies as well as nonlinear analyses of reinforced concrete structures.

He contributed to the activities carried out within the following working groups:

- *fib* WP 1.4.1 “Tunnels in Fiber Reinforced Concrete” (Fédération Internationale du Béton, Losanna, Svizzera): “Tunnels”, convenor: prof. eng. Alberto Meda;
- “Working Group 2” AITES/ITA, International Tunneling Association: “Research”, current convenor: eng. Elena Chiriotti;
- *SIG* Working Group 2 – Research, “Damages of segmental linings”, *SIG*, Società Italiana Gallerie, convenor: eng. Enrico Maria Pizzarotti.

He is co-author of three international documents regarding the design of Fiber Reinforced Concrete precast tunnel linings:

- International Tunnelling Association, ITA Working Group 2 “Research”, “Twenty years of FRC tunnel segments practice: lessons learnt and proposed design principles” (April 2016, pp. 71, ISBN 978-2-970-1013-5-2);



- ACI-Committee 544 “Fiber Reinforced Concrete”, sub-committee 544.7R-16 “FRC-Precast tunnel segments”, “Report on Design and Construction of Fiber Reinforced Precast Concrete Tunnel Segments”, ACI 544.7R-16;
- *fib* Working Party 1.4.1 (Fédération Internationale du Béton, Losanna, Svizzera): “Tunnels in fiber reinforced concrete”, *fib* Bulletin 83, “Precast tunnel segments in fibre-reinforced concrete”, ISSN 1562-3610, ISBN 978-2-88394-123-6, October 2017.

He contributed within the national project on innovative materials for tunnel linings, funded by the Italian Ministry for University, titled “Optimisation of the Structural, Technological and Functional Performance of Construction Methodologies and Materials in Tunnel Linings”, “Ottimizzazione delle prestazioni strutturali, tecnologiche e funzionali, delle metodologie costruttive e dei materiali nei rivestimenti delle gallerie”, principal investigator prof. G.A. Plizzari.

He has been advisor or co-advisor of many Master theses.

He attended 19 international conferences.

He is reviewer of the following international journals: ACI Materials Journal, Materials and Structures, *fib* Journal of Structural Concrete, Tunneling and Underground Space Technology, Materials, Construction and Building Materials, Buildings, Fibers and Journal of Structural Engineering.

He now teaches Structural Design course (9 CFU), first year of the master’s degree in Civil and Environmental Engineering and he teaches Structural Rehabilitation (6 CFU), second year of the master’s degree in Civil and Environmental Engineering.

He also collaborates within the course of “Progetto di strutture in acciaio e legno” with a module titled “Strutture in Legno” (3CFU), second year of the master’s degree in Ingegneria Civile ed Ambiente e Territorio.

He was involved for more than 10 years in teaching and tutorial activities in the course of “Tecnica delle Costruzioni”.

He was involved for 4 years in teaching and tutorial activities in the course of “Structural Rehabilitation” and for 2 years with seminar activities in the course of Architectural Restoration and Conservation (University of Brescia).

He held the course of Laboratorio di Tecnica delle Costruzioni (3 CFU, a.y. 2015/2016, a.y. 2016/2017).

He participates since February 2018 to the PhD program of Dottorato di ricerca in Ingegneria Civile, Ambiente, Territorio, Cooperazione Internazionale e di Matematica, DICACIM.

He is responsible of Erasmus Program for master’s degree in Civil and Environmental Engineering and in Ingegneria Ambiente Territorio as well as for bachelor’s degree in Ingegneria Ambiente Territorio.



He was responsible (October 2015-January 2018) of Erasmus program for Ingegneria Edile-Architettura, DICATAM.

Author of more than 50 articles published in journals and conference proceedings, national and international.

Latest publications on International Journals and Proceedings of International Conferences (Scopus indexed):

- Trabucchi, I., Smarslik, M., Tiberti, G., Petraroia, D.N., Plizzari, G.A., Mark, P. (2021). “A hybrid solution proposal for precast tunnel segments”, *Structural Concrete* (in press), ISSN: 0024-9831, doi: <https://doi.org/10.1002/suco.202000629>.
- Trabucchi, I., Tiberti, G., Plizzari, G.A. (2021). “A parametric numerical study on the behavior of large precast tunnel segments during TBM thrust phase”, *Engineering Structures*, 241, art. no. 112253, ISSN: 0141-0296, doi: <http://doi.org/10.1016/j.engstruct.2021.112253>.
- Tiberti, G., Trabucchi, I., AlHamaydeh, M., Minelli F., Plizzari, G.A. (2019). “Crack development in steel-fibre-reinforced concrete members with conventional rebars”, *Magazine of Concrete Research*, vol. 71, Issue 11, June, 2019, pp. 599-610, ISSN: 0024-9831, doi: <https://doi.org/10.1680/jmacr.17.00361>.
- Mudadu, A., Tiberti, G., Plizzari, G.A., Morbi, A. (2019). “Post-cracking behavior of polypropylene fiber reinforced concrete under bending and uniaxial tensile tests”, *Structural Concrete*, *Structural Concrete*, 20 (4), pp. 1411-1424, ISSN: 1464-4177, doi: <http://dx.doi.org/10.1002/suco.201800224>.
- Conforti, A., Trabucchi, I., Tiberti, G., Plizzari, G. A., Caratelli A., Meda A. (2019). “Precast tunnel segments for metro tunnel lining: A hybrid reinforcement solution using macro-synthetic fibers”, *Engineering Structures*, vol. 199, ISSN: 0141-0296, doi: <https://doi.org/10.1016/j.engstruct.2019.109628>.
- Mudadu, A., Tiberti, G., Germano, F., Plizzari, G.A., Morbi, A. (2018). “The effect of fiber orientation on the post-cracking behavior of steel fiber reinforced concrete under bending and uniaxial tensile tests”, *Cement and Concrete Composites*, 93, pp. 274-288. doi: <https://doi.org/10.1016/j.cemconcomp.2018.07.012>.
- Tiberti, G., Mudadu, A., Barragan, B., Plizzari, G. (2018). “Shrinkage cracking of concrete slabs-on-grade: A numerical parametric study”, *Fibers*, 6 (3), art. no. 64, doi: <https://doi.org/10.3390/fib6030064>.
- Tiberti, G., Germano, F., Mudadu, A., Plizzari, G.A. (2018). “An overview of the flexural post-cracking behavior of steel fiber reinforced concrete”, *Structural Concrete*, 19(3), pp. 695-718, doi: <http://dx.doi.org/10.1002/suco.201700068>.
- Conforti, A., Minelli, F., Plizzari, G.A., Tiberti G. (2018). “Comparing test methods for the mechanical characterization of fiber reinforced concrete”, *Structural Concrete*, 19(3), pp. 656-669, doi: <http://dx.doi.org/10.1002/suco.201700057>.
- Tiberti, G., Trabucchi, I., AlHamaydeh, M., Minelli, F., Plizzari, G. (2017). “Crack control in concrete members reinforced by conventional rebars and steel fibers”, *IOP Conference Series*:



Materials Science and Engineering, 246 (1), art. no. 012008, doi: <http://dx.doi.org/10.1088/1757-899X/246/1/012008>.

- Conforti, A., Tiberti, G., Plizzari, G.A., Caratelli, A., Meda, A. (2017). “Precast tunnel segments reinforced by macro-synthetic fibers”, *Tunnelling and Underground Space Technology*, Vol. 63, March 2017, ISSN 0886-7798, pp. 1-11, doi: <http://dx.doi.org/10.1016/j.tust.2016.12.005>.
- Conforti, A., Tiberti, G., Plizzari, G.A. (2016). “Combined effect of high concentrated loads exerted by TBM hydraulic jacks”, *Magazine of Concrete Research*, Vol. 68, Issue 21, November 2016, ISSN: 0024-9831, pp. 1122-1132, doi: <http://dx.doi.org/10.1680/jmacr.15.00430>.
- Conforti, A., Tiberti, G., Plizzari, G.A. (2016). “Splitting and crushing failure in FRC elements subjected to a high concentrated load”, *Composites Part B: Engineering*, Vol. 105, November 2016, ISSN: 1359-8368, pp. 82-92, doi: <http://dx.doi.org/10.1016/j.compositesb.2016.08.032>.
- Germano, F., Tiberti, G., Plizzari, G. (2016). “Post-peak fatigue performance of steel fiber reinforced concrete under flexure”, *Materials and Structures*, ISSN 1359-5997, Vol. 49, Issue 10, February 2016, pp. 4229-4245, doi: <http://dx.doi.org/10.1617/s11527-015-0783-3>.
- Germano, F., Tiberti, G., Plizzari, G. (2016). “Experimental behavior of SFRC columns under uniaxial and biaxial cyclic loads”, *Composites Part B: Engineering*, Vol. 85, February 2016, ISSN: 1359-8368, pp. 76-92, doi: <http://dx.doi.org/10.1016/j.compositesb.2015.09.010>.
- Bernardi, P., Michelini, E., Minelli, F., Tiberti, G. (2016). “Experimental and numerical study on cracking process in RC and R/FRC ties”, *Materials and Structures*, ISSN 1359-5997, Vol. 49, Issue 1-2, January 2016, pp. 261-277, doi: <http://dx.doi.org/10.1617/s11527-014-0494-1>.
- Conforti, A., Tiberti, G., Plizzari, G., Moro, S. (2016). “Experimental study on the effects of high-concentrated loads exerted by TBM hydraulic jacks”, *ITA-AITES World Tunnel Congress 2016, WTC 2016*, 2, pp. 1619-1628.
- Germano, F., Tiberti, G., Plizzari, G., Colombo, A. (2015). “Experimental behavior of precast HSFRC columns in steel socket foundation under cyclic loads”, *Engineering Structures*, Vol. 102, November 2015, pp. 230-248, doi: <http://dx.doi.org/10.1016/j.engstruct.2015.07.052>.
- Tiberti, G., Conforti, A., Plizzari, G.A. (2015). “Precast segments under TBM hydraulic jacks: Experimental investigation on the local splitting behavior”, *Tunnelling and Underground Space Technology*, ISSN 0886-7798, Vol. 50, August 2015, pp. 438-450, doi: <http://dx.doi.org/10.1016/j.tust.2015.08.013>.
- Tiberti, G., Minelli, F., Plizzari, G. (2015). “Cracking behavior in reinforced concrete members with steel fibers: A comprehensive experimental study”, *Cement and Concrete Research*, Vol. 68, February 2015, ISSN: 0008-8846, pp. 24-34, doi: <http://dx.doi.org/10.1016/j.cemconres.2014.10.011>.
- Tiberti, G., Minelli, F., Plizzari, G. (2014). “Reinforcement optimization of fiber reinforced concrete linings for conventional tunnels”, *Composites Part B: Engineering*, Vol. 58, March 2014, ISSN: 1359-8368, pp. 199-207, doi: <http://dx.doi.org/10.1016/j.compositesb.2013.10.012>.
- Tiberti, G., Minelli, F., Plizzari, G.A., Vecchio, F.J. (2014). “Influence of concrete strength on crack development in SFRC members”, *Cement and Concrete Composites*, Vol. 45, January 2014, ISSN: 0958-9465, pp. 176-185, doi: <http://dx.doi.org/10.1016/j.cemconcomp.2013.10.004>.
- Bernardi, P., Michelini, E., Sirico, A., Minelli, F., Tiberti, G. (2014). “Non-linear analyses and cracking process of FRC tension ties”, *Computational Modelling of Concrete Structures - Proceedings of EURO-C 2014*, 2, pp. 883-892.



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- Tiberti, G., Minelli, F., Plizzari, G.A., Vecchio, F.J. (2013). “The effect of concrete strength on cracking of SFRC members”, Proceedings of the 8th International Conference on Fracture Mechanics of Concrete and Concrete Structures, FraMCoS 2013, pp. 1237-1248.
- Tiberti, G., Plizzari, G.A., Cominoli, L. (2013). “Fibre Reinforced Concrete for tunnel linings”, *fib* Symposium TEL-AVIV 2013: Engineering a Concrete Future: Technology, Modeling and Construction, Proceedings, pp. 703-706.
- Minelli, F., Tiberti, G., Plizzari, G. (2011). “Crack control in RC elements with fiber reinforcement American Concrete Institute”, ACI Special Publication, (280 SP), pp. 76-93.
- Minelli, F., Tiberti, G., Plizzari, G.A. (2010). “Cracking in FRC R/C elements: A preliminary experimental study”, 3rd International fib Congress and Exhibition, Incorporating the PCI Annual Convention and Bridge Conference: Think Globally, Build Locally, Proceedings
- Tiberti, G., Plizzari, G.A., Walraven, J.C., Blom, C.B.M. (2008). “Concrete tunnel segments with combined traditional and fiber reinforcement”, Proceedings of the International fib Symposium 2008 - Tailor Made Concrete Structures: New Solutions for our Society, p. 66.
- Plizzari, G.A., Tiberti, G. (2007). “Structural behavior of SFRC tunnel segments”, Proceedings of the 6th International Conference on Fracture Mechanics of Concrete and Concrete Structures, 3, pp. 1577-1584.
- Burgers, R., Walraven, J., Plizzari, G.A., Tiberti, G. (2007). “Structural behavior of SFRC tunnel segments during TBM operations”, Proceedings of the 33rd ITA-AITES World Tunnel Congress - Underground Space - The 4th Dimension of Metropolises, 2, pp. 1461-1467.
- Plizzari, G.A., Tiberti, G. (2006). “Steel fibers as reinforcement for precast tunnel segments”, Tunnelling and Underground Space Technology, 21 (3-4), pp. 438-439.

Brescia, June 16th, 2021
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