

NOVEMBER 19, 2003 - Self-Leveling, Self-Pacing, Self-Compacting and Self-Consolidation Concrete

Speaker: [Mr. Richard Szecsy, Ph.D, P.E.](#) Tel. 972-221-4646, Cell: 214-202-1379, Vice-President of New Product Development with [Lattimore Materials Company](#), McKinney, TX.

PRESENTATION SUMMARY

Mr. Szecsy, a licensed professional engineer with BSCE and MSCE degrees from Texas A&M, a Ph.D. in Civil Engineering from the University of Illinois and an MBA from Our Lady of the Lake University, gave an ASCE presentation entitled, "Self-Leveling, Self-Placing, Self-Compacting and Self-Consolidating Concrete" to an audience of 25 describing a product called "SCC."

SCC is a proprietary concrete mix that, through the use of electrostatic repulsion of the grains of the cement and a special gradation and shape of aggregate, provides extremely high slump. The slump is so large that a new test is needed to measure it because the wet concrete flattens out to the shape of a pancake. Mr. Szecsy called the test a "slump flow test" and it is typically measured between 24 and 30 inches in diameter.

Once cured, the properties of the SCC concrete are identical to normal concrete. The main benefit of the product is that less labor is needed to install it. Trucks can be back to back as it only takes 45 seconds to tailgate a 10 yard load into a slab makeup. The concrete flows like a river down the beams. Pumps are usually not needed, workers do not need to push the concrete, the concrete self-levels, and it does not need vibrating. Since the workers stay out of the wet concrete, the risk of damage to the reinforcing during placement is reduced.

Mr Szecsy showed an example comparison with regular concrete showing an \$877 (\$0.29 / SF) savings for a foundation that would normally have cost \$14,037. In his example, the additional cost of concrete was more than offset by a) the savings in manhours (less than half needed) and b) not having a need for a pumper truck.

Mr. Szecsy said the use of SCC began in Japan in the mid 80's and was first used here in 1998. He said it may take many years before ASTM can rewrite their standards but that PCI already has interim guidelines for the product. While the obvious benefits are a) overall (i.e., material + labor) cost savings, b) more level concrete, c) less honeycombing, and d) more opportunity (crews only need half a day to finish so they can do two slabs per day), the downside is that tighter forms are needed, and the workers must be initially trained for the new product.

For further information on SCC, [click here](#)

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