

What It Does: Mats At The Finish Line

Every chip timing setup includes timing mats at the finish line. The primary benefits of using finish-line mats are more accurate recording and a less crowded finish area. Chip timing eliminates the problems inherent to manual timing; as such, there will be no mistakes in the results caused by confusing, multiple-chute finishing areas, "bandits" (runners who have not registered) confusing timers, runners wearing the wrong number, or runners who get out of order in the chutes. Also, because the process of matching times to numbers is computerized, human error is minimized, and times can be made available almost instantaneously through the system.

How It Works - The Technical part

Chip timing systems feature two components: a chip that carries a unique identification number, and a number of mats that activate the chip. The chip - along with an energizing coil - is encased within a durable shell, often glass or plastic, which is then housed in another plastic case. The shell is weatherproof, which allows for the chip to be worn in any racing conditions, regardless of temperature or moisture level. Significantly, there are no batteries inside the chip, and it can be reused again and again.

The chip's transponder is passive, and sends no signals until it is placed within the magnetic field created by the special mats. But once within this field, the coil within the chip becomes energized, produces an electric current, and powers the chip's transponder. The transponder sends a signal, reporting its own unique identification number, and this signal is captured by the "receive" antennas in the mat, and then collected by a computer. The mats contain two types of antennas. One type creates the magnetic field, while the other detects the signal emitted by the activated chip. The mats are placed at key locations along the course of a race: the finish, often at the start, and, at larger events, various checkpoints. A battery and some wiring are attached to the mat, providing energy to the "send" antennas, which create a magnetic field. The entire process of activating the chip and recording its signal takes merely a fraction of a second.