

WIM Site In-Service Evaluation- COST 323

The Inspectorate of Road Transport (IRT), currently uses portable static scales or fixed LS-WIM scales for vehicle weight enforcement in Poland, but the weighing process is time consuming and inefficient. With over 20,000 km of national roads to monitor, Poland currently uses High-Speed Weigh-In-Motion (HS-WIM) for overloaded vehicle screening, and is now evaluating HS-WIM technology for direct enforcement. Testing for compliance with WIM standards such as COST 323 is important to demonstrate prior to implementation of national enforcement standards for WIM.

“APM operates WIM installations throughout Europe, and we’ve observed site accuracy meeting standards where Intercomp strip sensors are installed.” A. Konior, APM PRO

Polish company APM PRO Ltd. installs and operates HS-WIM sites in mainline applications. One such site outside Krakow, Poland, includes two rows of Intercomp strain gauge strip sensors installed in asphalt which are currently used as screening for vehicle weight enforcement at high speeds. APM PRO conducted an evaluation of the accuracies in May, 2017 with the following vehicles: 2-axle rigid at 19,500 kg, 3-axle rigid at 24,000 kg, and 5-axle segmented at 40,000 kg.

The HS-WIM site demonstrated COST A(5) accuracies with all three vehicles for GVW, single axle, group axle, and axle in a group weights (see table). The performance of strain gauge strip sensors at this site provides in-service examples meeting or exceeding COST 323 A(5) criteria. These tests demonstrate [Intercomp Strip Sensors'](#) accurate weight performance for various vehicle configurations, increasing user’s ability to demonstrate consistent accuracy required for current screening and future direct enforcement applications.

To learn more about APM Pro, visit <https://apm.pl/en/systems/wim-pro/>



The 2-axle vehicle used in HS-WIM testing.



The 3-axle, 24T vehicle tested with a single axle and 2 axles in a group.



The 5-axle vehicle with trailer, consisting of 2 single axles and a 3-axle group.

Criterion	Accuracy					
	COST 323		2-Axle Vehicle	3-Axle Vehicle	5-Axle Vehicle	Obtained Accuracy Class
	A(5)	B+(7)				
Gross Vehicle Weight (Avg % error)	5%	7%	1.14%	2.88%	3.65%	A(5)
Group of Axles	7%	10%	---	3.33%	2.01%	A(5)
Single Axle	8%	11%	2.84%	1.88%	1.94%	A(5)
Axle in a Group	10%	14%	---	3.32%	6.01%	A(5)/---