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REPORT
issued by an Accredited Testing Laboratory

SP
Testing

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Test of horizontal moving gate for CE marking according to EN 13241+A2:2016.

This is a revision of the original report 7P03044C due to change of company name.

Summary

Table 1 Summary of test results according to EN 12445 and EN 12453

Control unit // Machinery	Speed	Safety edges	Door	Fulfils [i] req.
Came ZLJ24 // Came F1024 (one on each wing)	Opening: 55% ~125 mm/s Closing: 100 % ~200 mm/s	Came DFW 2,0 m 2,0 m mechanical	Cami Folding gate Himalaya 150 kg / wing	Yes

i) EN 12453 "Safety in use of power operated door – Requirements". The maximum allowed force between closing edges is 400 N within a period of time of maximum 0.75 s and unload the force within 5 s (reverse).

1 Introduction

SP has been commissioned by Cami Gruppen AB to perform crushing force tests on a power operated gate.

Place of testing: Cami Gruppen's test site in Landskrona, Sweden.

Test period: 2017-04-27.

2 Test gate

Table 2 Test gate

Door	Description	Size (B x H) [mm]	Total moving Mass [kg]
Cami Folding gate Himalaya	2 wings folding gate made of steel	5 000 x 2 340	150 kg / wing

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3 Test performance

After the gate had been mounted in a rigid frame by the client the crushing forces were measured in accordance with *EN 12445 Safety in use of power operated door – test methods*. The measuring equipment used was in accordance with the same standard. The points of measuring were selected in accordance with what the standard describes for folding doors. The crushing forces were therefore measured between the main closing edges of the door and the opposing edge according to Table 3. The measurements were performed, at ambient temperature, in opening gaps of 50, 300 and 500 mm. The maximum allowed force is specified in *EN 12453 Safety in use of power-operated door – Requirements*.

4 Test results

The results from the tests are shown in Table 3. The test results in this report are only valid for the tested objects.

Table 3   **Machinery:** Came F1024   **Speed:** ~140 mm/s
                  Door: Folding gate Himalaya 150 kg /wing   **Control unit:** Came ZLJ24
                  Safety edge: Came DF 20

Position	Opening gap [mm]	Crushing force [N]	Time while force > 150 N [ms]	Unload within 5 s
Bottom[1]	50	-*	-*	Yes
Centre[1]	50	-*	-*	Yes
Top[1]	50	-*	-*	Yes
Bottom[1]	300	241	211	Yes
Centre[1]	300	206	193	Yes
Top[1]	300	138	14	Yes
Bottom[1]	500	131	40	Yes
Centre[1]	500	207	101	Yes
Top[1]	500	199	169	Yes
Centre[2]	500	227	471	Yes
Centre[3]	500	220	236	Yes
Centre[4]	-	315	554	Yes
Centre[5]	-	331	719	Yes

[1] **Main closing edge.**
[2] **Between the folding wings right side.**
[3] **Between the folding wings left side.**
[4] **Backside opening wing right side .**
[5] **Backside opening wing left side .**
***The gap between the main closing edges when fully closed were > 50 mm - no measurement were taken.**

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5 Measurement uncertainty

The total calculated measurement uncertainty for the crush load < 1.5%, for the time < 5 ms and for the horizontal movements < 2 mm. Reported uncertainty corresponds to an approximate 95 % confidence interval around the measured value. The interval has been calculated in accordance with GUM (The ISO guide to the expression of uncertainty in measurements), which is normally accomplished by quadratic addition of the actual standard uncertainties and multiplication of the resulting combined standard uncertainty by the coverage factor $k=2$.

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