KAWASAKI STEEL TECHNICAL REPORT

No.43 (October 2000)

Automative Materials and Instrumentation and Process Control

Corrosion Behavior of Vehicles Operated in North America for 5 Years
Morishige Uchida, Kazuo Mochizuki
Synopsis:

Some passenger vehicles, which were manufactured in 1989 and 1991 and used around

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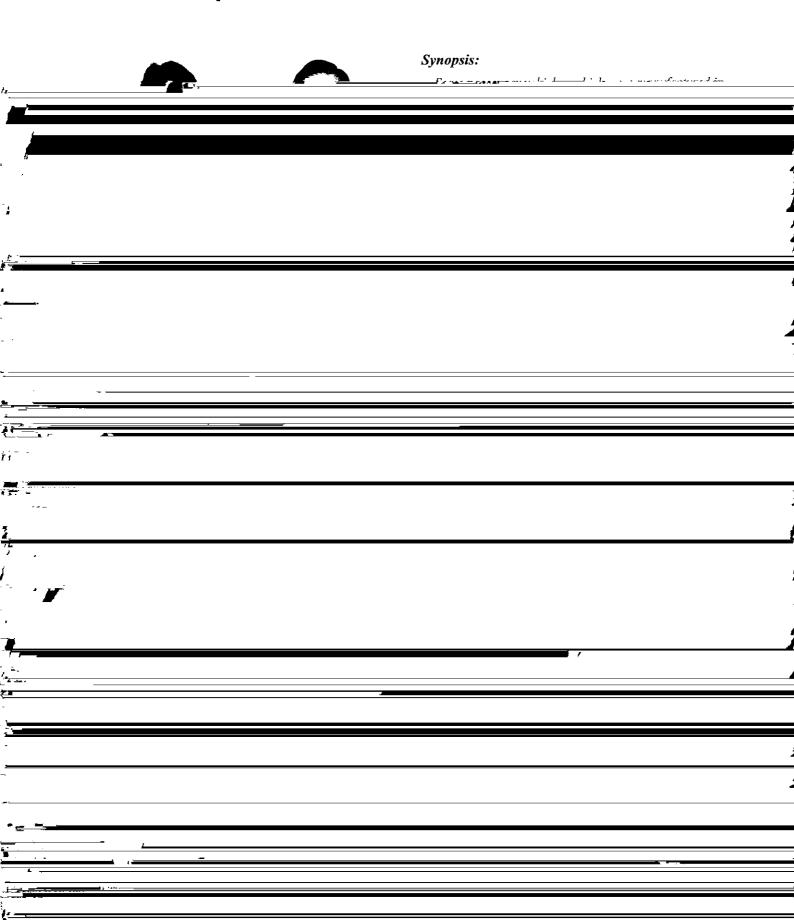




Table 3 Number of scab corroded parts

Corrosion type	Parts	Vehicle-A	Vehicle-B	Vehicle-C	Vehicle-D	Vehicle-F
Lapped part	Pillar outer	2	5	4	1	4
	Side sill outer	3	1	3	1	1
	Quarter panel	4	5	2	2	0
	Rear end panel	5	2	2	0	2
Stone chipping	Hood outer front	4	0	0	0	0
	Door outer	3	0	1	0	. 0
	Front fender	2	0	0	0	1
Hem flange	Hood hem	2	0	0	0	0
	Door hem	1	3	1	0	0
	Trunklid hem	2	1	0	. 2	0



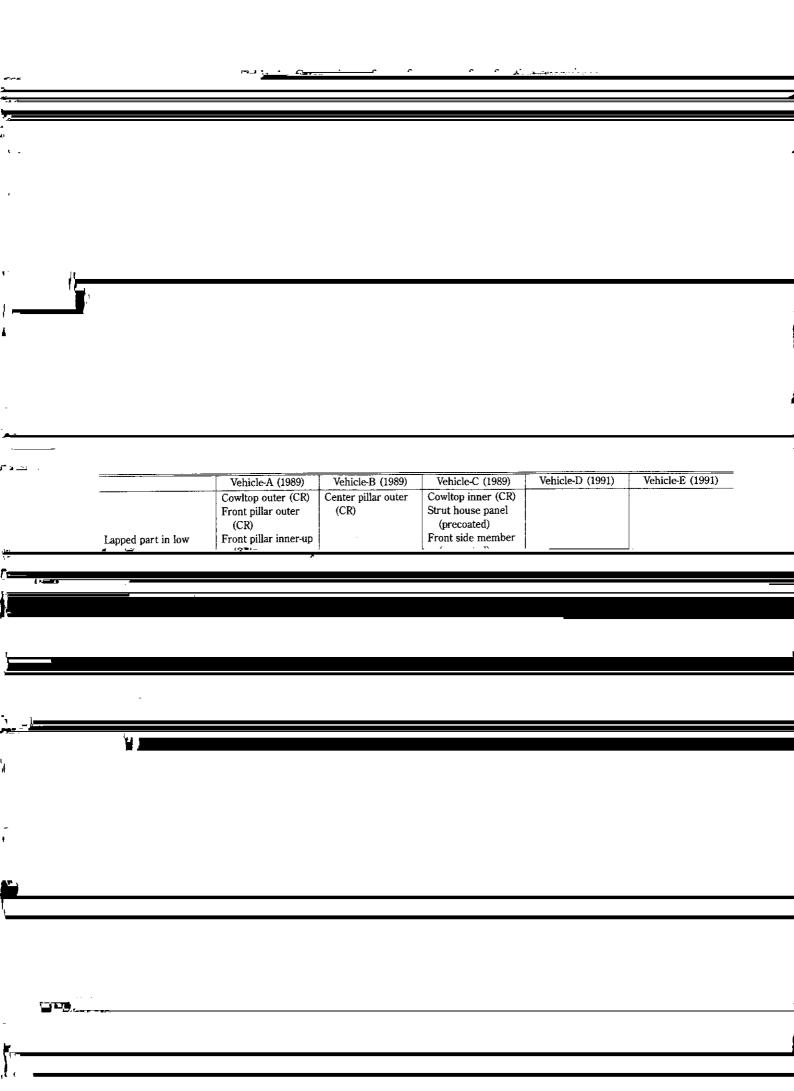


Table 5 Quantitative analyses of the mud adhered to panel

					(mass%)			
	Cl	Na	Ca	Mg	Fe	Zn		
Front side member outer	8.16	_		_	_	_		
Front side member outer-rear	1.50	1.31	6.96	2.13	5.38	2.35		
Front side member inner	16.90	10.86	7.27	1.55	2.35	0.61		
Front floor side member-front	1.84	-	_	-	_			
Front floor side member-rear	1.51	0.98	8.92	2.32	2.53	4.22		
Side sill outer	3.26	1.42	8.92	2.46	3.52	7.74		
Center pillar inner lower	1.51	1.02	8.60	2.18	3.06	7.79		
Rear floor cross	200							

condition for a long time. Thus, even in the same corrosive environment, two-sided coating may have a greater effect on perforation corrosion protection than one-side coating.

As shown in Table 4, perforation corrosion in the present survey did not occur in door hem flanges, despite the general belief that severe perforation corrosion occurs in hem flanges. In addition, it has been reported that in cold-rolled steel sheets without corrosion protection systems, perforation corrosion occurs after three years of use in North America (corrosion rate: 0.3 mm/y)^{11,12}.

Table 6 shows a summary of additional corrosion protection of the investigated vehicles. In almost all vehicle types, corrosion protection systems (adhesive, seam seal, injection wax) were used in door hem flanges and, they apparently were effective.

