Nano-laminated metallic cladding is an emerging technology using Zn/Ni that is being used to generate products with material property combinations heretofore not possible. Through a patented electrochemical controlled deposition process, Modumetal produces precisely defined configurations of layered metal alloys that can be applied to a variety of substrates or as near net shape parts.The deposition process can be controlled to produce nano-scale layers with unique interfacial properties resulting in corrosion resistance, elastic modulus, strength, hardness, and fracture toughness combinations uniquely different from conventional material processing.

Nanogalv is already on Shell's and bp's approved list of products.

It describes a new class of metals that is redefining the performance of metals in **corrosion protection, wear resistance, strength** and more for applications across the industrial sectors. Modumetal holds a patented manufacturing process and alloys designed based on this principle.

NanoGalv is the only option to score with **no red rust** at the conclusion of stressed cyclic corrosion trials.

TEST	ZNP + XYLAN®	CADMIUM	HOT DIP GALV.	NANOGALV®
ASTM B117 – Neutral Salt Fog (hours to 10% red rust)	950	650	<1,000	30,000
GM9540P – Cyclic Salt Spray under stress (cycles to 10% red rust)	<10 cycles	<10 cycles	<10 cycles	>50 cycles*
GMW14872 – Cyclic Corrosion under stress (cycles to 10% red rust)	<25 cycles	<25 cycles	<25 cycles	>125 cycles*
ASTMB117 – Salt Fog under stress (hours to 10% red rust)	<100 hours	NT	NT	>240 hours*

Time to failure comparative:

COATING TYPE	ESTIMATED YEARS TO FAILURE*
NanoGalv	93
Cadmium + PTFE	7
Hot Dipped Galvanize	5
ZnP + Xylan®	5

Currently Deployed in Field Trials in the Gulf of Mexico, Indonesia, North Sea, Lower 48, Alaska and more, including:

ExxonMobil
ConocoPhillips United Kingdom
Chevron
bp
Anadarko Petroleum Corporation
ConocoPhillips Australia

Note the Estimated Time to Failure Comparison with current bolting coatings in use. There is currently a nano coating plant in Houston. OSSL now is the authorized representative for Modumetal.