(1) $\begin{cases} p : \tilde{X} \to X \\ q : \tilde{Y} \to Y \end{cases}$ rivestimenti $\Rightarrow$ $p \times q : \tilde{X} \times \tilde{Y} \to X \times Y$ rivestimento
$(\tilde{x}, \tilde{y}) \mapsto (p(\tilde{x}), q(\tilde{y}))$

$p : \tilde{X} \to X$ rivest

$\Updownarrow$

(1) p suriettiva $\Rightarrow$ $p(\tilde{X}) = X$

(2) $\forall x \in X, \ \exists U \subseteq X$ aperto, $U \ni x \ \wedge \ \exists \{\tilde{U}_j\}_{j \in J} \subseteq \tilde{X}$ aperti $\Big|$

$$\Bigg| \begin{cases} p^{-1}(U) = \bigsqcup_{j \in J} \tilde{U}_j \\ \tilde{U}_j \cap \tilde{U}_k = \emptyset, \ \forall j,k \in J, \ j \neq k \\ p|_{\tilde{U}_j} : \tilde{U}_j \to U \ \text{omeomorfismo} \ \forall j \in J \end{cases}$$

Analogo per q (con V al posto di U)

p suriettiva $\wedge$ q suriettiva $\Rightarrow$ $p \times q$ suriettiva

i.e. $(p \times q)(\tilde{X} \times \tilde{Y}) := p(\tilde{X}) \times q(\tilde{Y}) = X \times Y$

$\forall (x,y) \in X \times Y, \exists U \times V \subseteq X \times Y$ aperto, $U \times V \ni (x,y) \wedge \exists \{\tilde{U}_j \times \tilde{V}_j\}_{j \in J} \subseteq \tilde{X} \times \tilde{Y}$ aperti $\Big|$

$$\Bigg| \begin{cases} (p \times q)^{-1}(U \times V) = \bigsqcup_{j \in J} \tilde{U}_j \times \tilde{V} \\ (\tilde{U}_j \times \tilde{V}_j) \cap (\tilde{U}_k \times \tilde{V}_k) = \emptyset, \ \forall j,k \in J, \ j \neq k \\ p \times q|_{\tilde{U}_j \times \tilde{V}_j} = p|_{\tilde{U}_j} \times q|_{\tilde{V}_j} : \tilde{U}_j \times \tilde{V}_j \to U \times V \ \text{omeomorfismi} \ \forall j \in J \end{cases}$$