For which kinds of specifications $P$ and $Q$ is the following a theorem:

§ First, rewrite the two sides.
\[-(P \cdot \neg Q) \equiv \forall \sigma'': (\sigma' \rightarrow P) \sigma'' \Rightarrow (\sigma \rightarrow Q) \sigma''\]
\[P \cdot Q \equiv \exists \sigma'': (\sigma' \rightarrow P) \sigma'' \land (\sigma \rightarrow Q) \sigma''\]

(a) \[-(P \cdot \neg Q) \iff P \cdot Q\]
§ If, for all prestates, $P$ is deterministic, then (a) is a theorem. (That’s sufficient, but not necessary.)

(b) \[P \cdot Q \iff -(P \cdot \neg Q)\]
§ If, for all prestates, $P$ is satisfiable ($P$ is implementable), then (b) is a theorem.

(c) \[P \cdot Q = -(P \cdot \neg Q)\]
§ If, for all prestates, $P$ is satisfiable and deterministic, then (c) is a theorem.