

Inference at *
of proof for Lemma zip_wf:

$\vdash \forall T_1, T_2 : \text{Type}, as : (T_1 \text{ List}), bs : (T_2 \text{ List}). \text{zip}(as;bs) \in ((:T_1 \times T_2) \text{ List})$
by (((((((((((((((((((((((((((((D 0)
CollapseTHENM (D 0))·)
CollapseTHENM (D 0))·)

CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·)
CollapseTHEN (ListInd (-1)))·)
CollapseTHEN (RecUnfold 'zip' 0))·
)
CollapseTHEN (Reduce 0))·)
CollapseTHEN (Try (Complete (Auto_aux (first_nat 1:n) (first_nat 1:n),(first_nat 1000:n)) (first_tok :t) inil_term))))·)
CollapseTHEN (D 0))·)
CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·)
CollapseTHEN (ListInd (-1)))·)
CollapseTHEN (Reduce 0))·)
CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·

1: ...subterm.... T:t2:n

1. $T_1 : \text{Type}$
 2. $T_2 : \text{Type}$
 3. $T_1 \text{ List}$
 4. $u : T_1$
 5. $v : T_1 \text{ List}$
 6. $\forall bs : (T_2 \text{ List}). \text{zip}(v;bs) \in ((:T_1 \times T_2) \text{ List})$
 7. $T_2 \text{ List}$
 8. T_2
 9. $v_1 : T_2 \text{ List}$
 10. $\text{rec-case}(v_1)$ of [] => [] | $b::bs'$ => $.[\langle u, b \rangle / \text{zip}(v;bs')] \in ((:T_1 \times T_2) \text{ List})$
- $\vdash \text{zip}(v;v_1) \in ((:T_1 \times T_2) \text{ List})$